

# The Mining Journal.

## RAILWAY AND COMMERCIAL GAZETTE:

FORMING A COMPLETE RECORD OF THE PROCEEDINGS OF ALL PUBLIC COMPANIES.

[The Mining Journal is Registered at the General Post Office as a Newspaper and for Transmission Abroad.]

No. 2424.—VOL. LII.

LONDON, SATURDAY, FEBRUARY 4, 1882.

[WITH SUPPLEMENT.] PRICE SIXPENCE PER ANNUM, BY POST 4s.

**MR. JAMES H. CROFTS, STOCK AND SHARE BROKER, AND MINING SHARE DEALER,**  
No. 1, FINCH LANE, CORNHILL, LONDON, E.C.  
ESTABLISHED 1842.

BUSINESS transacted in all descriptions of MINING Stocks and Shares (British and Foreign), Consols, Bonds (Foreign and Colonial), Railways, Insurance, Telegraph, Tramway, Shipping, Canal, Gas, Water, and Dock Shares, and all Miscellaneous Shares.  
Business negotiated in Stocks and Shares not having a general market value.  
Every Friday a general and reliable List issued (a copy of which will be forwarded on application), containing closing prices of the week.

**MINES INSPECTED.**  
BANKERS: CITY BANK, LONDON—SOUTH CORNWALL BANK, ST. AUUSTELL.

**SPECIAL DEALINGS in the following, or part:—**  
50 Arenal, £2 1s. 3d. 25 Hington Down, 18s. 9  
50 Almada, 6s. 100 Herodfoot, 5s. 20 Ruby, 37s. 6d.  
50 Bedford United, 30s. 6 25 Roman Gravel, £10 5s  
50 Bratsberg, 32s. 3d. 30 S. Indian Gold, 17s. 9d  
50 Bwch United, 25s. 30 Killifreth, £2 1s. 3d. 10 S. Condurow, £10 3 9  
50 Carnarvon Cop., 15s. 30 Kapanga, 10s. 30 S. Darren, 25s.  
50 Callao Bis, 10s. 9d. 25 Langford, 10s. 25 S. E. Wynaad, 19s.  
10 Devon Con., £2 1/2 100 Last Chance, 10s. 9d. 30 S. Penstruthal, 6s. 3d  
50 Devon Friend., 10s. 6d 20 Leadhills, £2 1/2 50 Santa Barbara, 23s. 6  
50 East Blue Hills, 12s. 3 25 Marke Valley, 17s. 50 So. Devon Uni., 17s. 6  
50 East Caradon, 10s. 50 Moria Du, 10s. 50 Sortridge, 10s.  
25 E. Chiverton, £2 11 3 50 Mysore Reef, 5s. 25 Tanker, Gt. Con., 6s.  
25 East Lovell, £2 1/2 50 No. Herodfoot, 6s. 25 United Van Con., 14s.  
50 E. Roman Grav., 17s. 6 100 Nouv. Monde, 6s. 3d. 50 West Phoenix, £1.  
50 English Australian 50 No. Penstruthal, 12s. 20 West Caradon, 7s. 6d.  
Gold, 12s. 6d. 100 New W. Caradon, 6s. 15 West Polbreon, 27s.  
20 East Van, 15s. 100 Pandora, 8s. 9d. 50 Wheal Crebor, £2 1/2  
50 Frontino, £2 1/2 100 Polrose, 6s. 50 West Orebor, 6s. 9d.  
50 Glenrock, 19s. 50 Port Phillip, 5s. call paid.  
50 Glenrov, 7s. 6d. 50 Potom, 12s. 10 West Kitty, £3 1/2  
50 Gold Coast, 30s. 50 Parys Copper, 14s. 3d 20 Wheal Jane, 21s. 3d.  
50 Grogwinlon. 50 Panullico. 10 Wheal Kitty, 25s.  
50 Gt. So. Mysore, 5s. 50 P. of Wales, 15s. 10 Wheal Sisters, 22s. 6d  
50 Pestarena, 4s. 3d.

\* \* SHARES SOLD FOR FORWARD DELIVERY (ONE, TWO, OR THREE MONTHS) ON DEPOSIT OF TWENTY PER CENT.  
\* \* SPECIAL BUSINESS at CLOSE PRICES in all Market TIN, COPPER, and LEAD SHARES.

JAMES H. CROFTS, 1, FINCH LANE, LONDON.  
ESTABLISHED 1842.

**RAILWAYS—FOREIGN BONDS—SPECIAL BUSINESS.**  
Fortnightly Accounts opened on receipt of the usual cover.  
JAMES H. CROFTS, 1, FINCH LANE, LONDON.

**AMERICAN AND CANADIAN STOCKS AND SHARES—SPECIAL BUSINESS.**  
Fortnightly Accounts opened on receipt of the usual cover.  
JAMES H. CROFTS, 1, FINCH LANE, LONDON.

**INDIAN GOLD MINES.—SPECIAL BUSINESS in:—**  
Cootacovil. Indian Kingdom. Rhodes Reef.  
Devala Moyar. Indian Trevelyan. South-East Wynaad.  
Devala Central. Mysore. Mysore Reefs. South Indian Gold.  
Great Southern Mysore. Oregum. Tambercherry.  
Indian Glenrock. Wynaad Perseverance.  
Indian Phoenix. Organo.

At CLOSE MARKET PRICES, free of commission.  
\* \* Reliable information given on any of the above. A daily price list issued giving closing quotations. SPECIAL BUSINESS in La Plata, Rio Tinto, Frontino and Bolivia, Potom, Ruby, Nouveau Monde, and Richmond.

\* \* SHARES in the ABOVE INDIAN OR OTHER GOLD AND SILVER MINES SOLD FOR FORWARD DELIVERY ONE, TWO, OR THREE MONTHS ON DEPOSIT OF TWENTY PER CENT.  
JAMES H. CROFTS, 1, FINCH LANE, LONDON.

**MR. W. H. BUMPUS, STOCK AND SHARE BROKER, AND MINING SHARE DEALER**  
44, THREADNEEDLE STREET, LONDON, E.C.  
ESTABLISHED 1867.

BUSINESS transacted in STOCK EXCHANGE SECURITIES and MISCELLANEOUS SHARES of every description.  
RAILWAYS, FOREIGN AND COLONIAL BONDS, TRAMWAYS, TELEGRAPHS, and all the LEADING INVESTMENTS.  
Accounts opened for the Fortnightly Settlement  
A List of Investments free on application.

**MR. BUMPUS has SPECIAL BUSINESS in the undermentioned:—**  
50 Arenal, £2 1/2 100 East Blue Hills, 11s. 6 70 Parys Copper, 16s.  
50 Alankoo, offer wanted 100 Eberhardt, 11s. 15 Pumas Eureka.  
50 Almada, 6s. 0d. 25 East Caradon, 7s. £2 12s. 6d.  
50 Bedford United, 29s. 6 100 Frontino, £2 1/2 200 Quartz Hill, 3s. 9d.  
50 Bratsberg, 32s. 3d. 100 Gold Coast, 30s. 40 Ruby, 36s. 6d.  
100 Broadway Gold, £2 1/2 15 Gunnislake (Clitters), 20 Richmond, £12 1/2  
100 Carta Para, offer 25 6s. 3d. 100 Rhodes Reef, 12s. 0d.  
50 Carnarvon, 16s. 0d. 75 Goodveer, 23s. 10 Rio Tinto, £25 1/2  
3 Carn Brea, £24. 20 Great Holway. 75 South-East Wynaad, 21s.  
50 Colorado, 39s. 6d. 100 Indian Phoenix, 13s. 9 50 South Devon, 19s. 6d.  
15 Copinco, £2 5s. 6d. 75 Potom, 11s. 0d. 100 South Indian, 23s. 6d.  
50 Callao Bis, 12s. 6d. 40 Killifreth, 60 Santa Cruz, 13s. 6d.  
100 Dingley Dell, offer 100 La Plata, 43s. 6d. 100 Tankerville, 7s. 6d.  
50 Devala-Moyar, 19s. 9d 50 Leadhills, £2 1/2 6d. 150 Wynaad District, 100 Wynaad Perseverance  
50 Dev. Friendship. 150 Marke Valley, 17s. 6d offer wanted. 7s. 6d.  
15 Devon Consols, £2 1/2 25 New Quebrada, £4 3 9 50 W. Godolphin, £2.  
40 Derwent, 19s. 9d. 100 Fen-yr-Ossed, 20s. 25 Wheal Jewell, 10s.  
2 Dolcoath, £4 1/2 75 Potom, 11s. 0d. 15 Wh. Grenville, £11 1/2  
20 Don Pedro, 8s. 6d. 100 Port Phillip, 6s. 0d. 30 Panullico, £5 16s. 3d

**SPECIAL BUSINESS**, at close prices, in the SHARES of all the principal HOME and FOREIGN MINES.  
Mr. BUMPUS devotes special attention to these Securities, and is in a position to afford reliable information and advice to intending investors and others.

**IMPORTANT TO INVESTORS.**—Shares in SOUND DIVIDEND and PROGRESSIVE MINES (particularly TIN and COPPER) should be bought at present prices, as many of them are likely to have a considerable rise before long. There is every probability that much higher quotations will rule within the next few months.

The following are particularly recommended:—  
WHEAL GRENVILLE. WEST GODOLPHIN.  
WEST KITT. WHEAL BOYS.  
WEST PEYER. DEVON FRIENDSHIP.  
GREAT HOLWAY. NEW TRUMPET CONSOLS.

**WILLIAM HENRY BUMPUS, SWORN BROKER.**  
OFFICES: 44, THREADNEEDLE STREET, LONDON, E.C.  
ESTABLISHED 1867.

**ABBOTT AND CO., STOCK AND SHARE BROKERS,**  
CORNHILL, LONDON.  
IMPORTANT DISCOVERY OF COPPER AT THE SILVER HILL MINE.  
See report in this day's Journal.  
Mid-monthly Circular post free on application.

**MESSRS. ABBOTT AND WICKETT, STOCK AND SHARE BROKERS, REDRUTH.**  
ORDERS BY TELEGRAM PROMPTLY EXECUTED.

**JOSEPH TOMS, STOCK AND SHARE DEALER,**  
No. 88, BISHOPSGATE STREET WITHIN, E.C., has FOR SALE—  
100 Kapanga, 3s. 3d. 20 United Van and Glyn. 20 Standard Bank, London.  
100 Bwch United. 20 Wheal Sisters. don, £3 pd., off. w.d.  
Special business can be transacted in the shares against which prices are not asked.  
For a great rise—New Trumpet Consols, Sinclair Lead, and Great Holway shares should be bought.

**BRITISH AND FOREIGN MINING OFFICES.**

**Messrs. PETER WATSON AND CO.,**  
AUSTIN PRIARS  
OLD BROAD STREET, LONDON, E.C.  
BANKERS: THE ALLIANCE BANK (Limited).

**Messrs. PETER WATSON AND CO.'S**  
BRITISH AND FOREIGN MONTHLY MINING NEWS  
—STOCK AND SHARE INVESTMENT NOTES—MINES, MINERALS, AND METAL MARKETS—SHARE LIST,  
No. 838, VOL. XVII., for JANUARY month, is now ready, and will be sent to customers on application.

Annual Subscription..... 5s. Single Copy..... 6d.

**Messrs. PETER WATSON AND CO.,**  
18, AUSTIN PRIARS, E.C.

**NOTICE OF REMOVAL.**

**MR. ALFRED E. COOKE** begs to announce that in consequence of the Offices at 76, Old Broad-street, which he has occupied for over 15 years, being required for the enlargement of the Stock Exchange, he has REMOVED to—  
No. 9, OLD BROAD STREET.  
(NEARLY OPPOSITE.)

**MR. ALFRED E. COOKE,**  
DEALER in BRITISH AND FOREIGN STOCKS and SHARES of EVERY DESCRIPTION.  
9, OLD BROAD STREET, LONDON.  
ESTABLISHED 1853.

**LOW PRICES.** It is believed that many of the shares quoted in the following list are NOW AT THEIR LOWEST, and much below their INTRINSIC VALUE.

**STOCKS AND SHARES FOR SALE.**

Mr. ALFRED E. COOKE can SELL the following lots (or any smaller number of shares) to immediate applicants at prices annexed, free of commission. Where prices are not inserted, the market price of the day will be taken, or offers may be made:—

50 Bedford United Cop., £2 1/2	40 Indian Glenrock Gold 13s. 3d.	10 E. Gravel Lead, 10s. 6
30 Bratsberg Cop., 31s.	75 Indian Trevelyan Gold, 11s. 9d.	80 Prince of Wales Cop. 14s. 9d.
40 Carnarvon Copper, 15s	20 Killifreth Tin, 42s.	10 Richmond Silver, 12s. 6
50 Callao-Bis Gold, 11s	30 La Plata Lead, £2 1/2	40 Ruby, 35s.
25 D'Ersby Mount Lead	10 Leadhills, £2 1/2	50 So. Devon Cop., 20s.
50 Devala Gold, 19s. 6d.	25 Langford Silver and Copper, 10s.	30 South-East Wynaad Gold 21s.
75 Devon Friend., 10s. 6	40 Mona Con. Cop., 22s.	80 So. Indian Gold, 19s.
50 Devon Gt. Uni. 12s. 6	10 Moria Du, 10s. 0d.	30 Sortridge Copper and Tin.
50 Devon Consols Cop.	50 Mysore Gold, 23s.	20 Tamar Silver-Lead.
2 Dolcoath Tin, £8 1/2	20 Michipicoten Copper.	100 Tanker. Gt. Con., 5s.
50 Don Pedro Gold, 6s. 3	50 Mysore Reef Gold, 5s. 9	50 West Orebor Cop., 5s.
10 East Chiverton.	10 New Kitty Tin, £2 1/2	25 West Phoenix Tin and Copper, 20s.
10 East Lovell Tin, £2 1/2	60 New West Caradon Copper, 6s. 9d.	10 West Kitty Tin, £2 1/2
25 East Roman Gravel Lead, 15s.	40 No. Herodfoot, 7s. 6d	50 West Polbreon Tin, £1 1/2
90 East Rose Lead, 10s. 6d	50 Nouveau Monde Gold 6s.	30 Wheal Jane Tin.
40 East Blue Hills Tin, 12s. 6d.	100 Polrose Tin.	5 Wheal Agar Tin, £14 1/2
25 Eng.-Australian Gold 13s. 6d.	100 Potosi Gold, 11s. 3d.	50 Wheal Crebor Copper £2 1/2
30 Frontino Gold, £2.	100 Parys Copper, 14s. 3d	60 Wheal Lisburne Lead £2 1/2
15 Herodfoot Lead.	30 Plover Copper and Lead, 16s. 9d.	
50 Hoover Hill, 9s.		

Many of the above shares can be sold for settlement by arrangement at end March on payment of 20 per cent. deposit. Shares not found in the above list may be purchased on application.

N.B.—The present is a most favourable time to purchase shares in ESTABLISHED TIN and COPPER MINES at cheap prices.

Mr. Alfred E. Cooke is buyer of shares in all the LEADING MINES at current market price.

Investors should send for the INVESTORS' GAZETTE, published LAST EVENING.

TELEGRAMS and LETTERS receive immediate attention. All shares currently dealt in, bought and sold, free of commission.

ALFRED E. COOKE, 9, OLD BROAD STREET, LONDON.

(Opposite the Stock Exchange, with which the offices are in DIRECT TELEGRAPHIC COMMUNICATION.)

**STOCKS AND SHARES, RAILWAYS, AND OTHER LEADING SECURITIES.**

**MR. JAMES STOCKER, STOCKBROKER,**  
2, CROWN COURT, THREADNEEDLE STREET, LONDON, E.C.

Special Business at close prices in all British, Colonial, and Foreign Mine Shares.  
BANKERS: LONDON AND WESTMINSTER.

**FERDINAND R. KIRK, STOCKBROKER,**  
5, BIRCHIN-LANE, LONDON, E.C.

Fortnightly Accounts opened in all Stock Exchange Securities on receipt of the usual cover.

BANKERS: LONDON AND WESTMINSTER, Lothbury.

**MR. W. B. COBB, STOCK AND SHARE DEALER,**  
29, BISHOPSGATE-STREET, LONDON, E.C.

**STOCK AND SHARE DEALERS' NOTICE.**  
Purchase strongly recommended for investment.  
Information as to shares generally of all descriptions.  
Mr. Reynolds's Article appears this week on page 127.  
Apply to—  
JOHN B. REYNOLDS, 37, WALBROOK, LONDON.  
BANKERS: LONDON JOINT-STOCK.  
ESTABLISHED 25 YEARS.

**Messrs. J. TAYLOR AND CO.,**  
MINING ENGINEERS AND INSPECTORS,  
86, LONDON WALL, LONDON, E.C.

Have Agents in the various Mining Districts of Great Britain, the Continent, Australia, and the United States of America.

Inspections undertaken, either personally or by our Agents, and Reports of Advice as to Working given.

**MR. W. MARLBOROUGH, STOCK AND SHARE DEALER,**  
29, BISHOPSGATE STREET, LONDON, E.C. (Established 28 Years).

Can SELL the following SHARES at prices annexed:—

30 Bedford Unit., 28s.	100 I.X.L., 3s. 9d.	50 Rhodes Reef, 12s.
25 Bwch United, 22s. 6d	50 Indian Trevel., 12s. 6	25 Ruby, £1 18s. 9d.
20 Colorado, £1 18s. 9d.	30 Kapanga, 9s. 6d.	40 Russia Copper, 19s. 3d
100 Chontales, 3s. 6d.	25 Kit Hill, 14s.	25 South Crebor, 14s.
40 Dev. Friendship, 9s.	50 Langford Silver and Copper, 9s. 0d.	10 S. Condurow, £10 5s
10 Devon Consols, 45 1/2	50 Last Chance, 10s. 0d.	25 South Darren, 23s.
50 Don Pedro Gold, 6s.	25 Leadhills, £2 3s.	25 Tin Hill, 16s. 3d.
20 Eberhardt, 11s. 9d.	25 Marke Valley, 17s. 6d	100 Van and Glyn Pref., 22s., fully paid.
30 East Blue Hills, 13s. 3	50 Mysore Gold, 21s. 3d.	50 Van and Glyn Ordinary, 13s. 3d.
100 Exchequer 3s. 6d.	100 Nouveau Monde, 5s	5 Van, £2.
20 Frontino, £2 18s. 9d.	50 N. Trumpet Con., 13s. 9d.	35 West Orebor, 6s. 6d.
20 Gunnislake (Clitters), 43s. 9d.	40 N. W. Caradon, 8s.	c. p.
50 Gold Coast, 29s. 0d.	20 New Kitty, £2 3s.	50 West Lisburne, 19s.
25 Hington Down, 21s	20 Organos Gold.	20 Wheal Jane, 23s.
50 Indian Glen., 21s. 3d.	50 P. of Wales, 15s. 6d.	20 Wheal Crebor, £3.
fully paid.	50 Parys Corpora., 14s. 6	100 Wynaad District, 6s.
50 Indian Phoenix, 14s.	100 Pestarena, 4s. 6d.	

**THE "DIFFERENTIAL" PUMPING ENGINE**  
(DAVEY'S PATENT),  
FOR  
DRAINING MINES, WATER SUPPLY OF TOWNS, IRRIGATION,  
SUPPLYING DOCKS, PUMPING SEWAGE, and GENERAL  
PUMPING PURPOSES.

**HATHORN, DAVEY, AND CO.,**  
LEEDS.

HATHORN, DAVEY, and Co. have Patterns of "Differential" Engines of sizes, from 5 to 500-horse power, and have facilities for supplying very powerful Engines and Pumps at a short notice.

See Illustrated Advertisement every alternate week.

**MR. CHARLES THOMAS,**  
MINING AGENT, STOCK AND SHARE DEALER,  
3, GREAT ST. HELEN'S, LONDON, E.C.

**MR. ALFRED THOMAS,**  
MINING AGENT, AND STOCK AND SHARE DEALER,  
10, COLEMAN STREET, LONDON, E.C.

**MINING INVESTMENTS.**—Third Edition, just published.  
"What to Select, and What to Avoid," by ALFRED THOMAS, 10, Coleman-street, London, E.C. Will be forwarded on receipt of 12 stamps.

**MR. EDWARD ASHMEAD, 2, DRAPER'S GARDENS, E.C.,**  
MINING SECRETARY, AUDITOR, AND ACCOUNTANT.

**HORACE J. TAYLOR, STOCK AND SHARE DEALER,**  
38, GREAT ST. HELEN'S, LONDON, E.C.  
BANKERS: THE CENTRAL BANK OF LONDON (Limited).

**MR. JOHN RISLEY, STOCK AND SHARE BROKER,**  
38, CORNHILL, LONDON, E.C.  
ESTABLISHED TWENTY YEARS.

BANKERS: LONDON AND WESTMINSTER (Lothbury).  
Shares specially recommended for immediate investment, viz.—West Caradon New West Caradon, Polrose, Parys, Sortridge, Wheal Crebor, West Orebor, East Blue Hills, and Langford. These shares are likely to advance in price many hundreds per cent. within a very short period.

**MR. E. J. BARTLETT, 30, GREAT ST. HELENS, LONDON,**  
E.C., has special dealings in Stock Exchange Securities and Miscellaneous Shares of every description.

Circulation ever increasing. Sixteenth Edition just out.  
"HOW TO INVEST."

"More valuable than ever."—Fide public Press. Post free 1s.  
Published by E. J. BARTLETT, F.R.G.S., 30, Great St. Helens, London, E.C.

**Messrs. ENDEAN AND CO., STOCK AND SHARE**  
DEALERS, 85, GRACECHURCH STREET, LONDON, E.C.  
ESTABLISHED 1861.

BANKERS: London and Westminster, Lothbury, E.C.

**Messrs. F. E. WATSON AND CO.,**  
FINANCIAL AGENTS,  
STOCK AND SHARE DEALERS,  
4, COTHALL BUILDINGS,  
THROGMORTON STREET LONDON, E.C.

F. E. W. and Co. strongly recommend an investment in the following companies at present prices:—  
British & Foreign Boat East Chilton Man- Ferran Silver-Ld., 22s. 6  
Lowering, 27s. 6d. ganese, 45s.

ESTABLISHED 1858.

**Messrs. CUNLIFFE, ENTWISLE, AND CO.,**  
FINANCIALISTS,  
MINING AND CONSULTING ENGINEERS,  
MINERAL ASSAYERS,  
STOCK AND SHARE BROKERS,  
77, BLOOMSBURY, OXFORD STREET; AND 2, UPPER BROOK STREET, MANCHESTER.

BANKERS: Manchester and Oldham Bank (Limited),  
Pall Mall, Manchester.

**GRANVILLE SHARP, STOCK AND SHARE DEALER,**  
32, QUEEN VICTORIA STREET, LONDON, E.C.

Still recommends the purchase of shares in SOUND BRITISH MINES for advance in price and increased dividends. In consequence of the generally improving condition of Trade and Commerce, the market for all metals must necessarily continue to improve, and the shares in all Sound British Mines are certain to advance proportionately.

**EAST CHIVERTON SILVER-LEAD MINES.**

GRANVILLE SHARP specially recommends the purchase of shares, the mine being on the eve of proving a very valuable property, as evidenced by the recent important discovery in the 90 fm. level driving west, where is a course of rich silver-lead ore already proved for over 30 fms., and has opened up valuable reserves which are being increased daily between that (90 fm.) level and the level over. A second 50-ton parcel of the ore was sold recently realising £631 5s.

It is an important fact that EAST CHIVERTON MINE is on the same lode which in the mine immediately west produced between the years 1863 and 1872 silver-lead ore that realised very nearly HALF A MILLION STERLING, and between 1875 and 1880 LEAD and BLENDE ORES amounting to £110,000. These facts can be verified by the books in Mr. Granville Sharp's possession, at 32, Queen Victoria-street, E.C.

BANKERS: London and Westminster, E.C.

**Messrs. H. MANSELL AND CO., STOCK AND SHARE**  
DEALERS, 19, BISHOPSGATE STREET WITHIN, LONDON, E.C.

**TWENTY-SEVEN YEARS' EXPERIENCE.**  
The following SHARES are FOR SALE at prices affixed:—

40 Hornachos, £10.	175 Devon Friendship,	35 South Devon United,
100 Silver Peak, 7s. 6d.	11s. 3d.	offer wanted.
175 Bratsberg, 32s. 6d.	100 West Phoenix, 13s. 9d.	20 Richmond.
50 Derwent, 17s. 6d.	500 W. Craven Moor,	50 Ruby.
125 Wheal Jewell, 6s. 3d.	offer wanted.	

**FOR SPECIAL SALE, AT NET PRICES:—**  
300 HERODFOOT, any offer wanted.  
200 WHEAL JANE, 13s. 9d.  
500 EAST CRAVEN MOOR, 10s. 3d.  
500 SOUTH DARREN, 18s. 9d.  
300 ORGANOS GOLD, £3.  
200 DEVONPORT AND TIVERTON BREWERY.

**FOR SPECIAL SALE. OFFERS CAN BE MADE:—**  
25 Wheal Sisters. 30 Pestarena. 150 Gt. Southern Mysore,  
250 Silver Peak. 125 Wheal Jewell. 20s. paid.  
25 West Caradon. 40 Frongoch. 100 Mona.  
BUYERS of Grenville, Tamar, South Crebor, Carn Camborne, Van Consols and Glyn, and Carnarvonshire Great Consols. Sellers please state very lowest price.

**MR. ALEXANDER DAVIDSON**  
STOCK AND SHARE DEALER,  
139, LEADENHALL STREET, LONDON, E.C.

SHARES are FOR SALE, or OFFERS CAN BE MADE:—

100 Bodidris.	30 Killifreth.	100 Sortridge Con. (£1
80 Bratsberg, 32s.	100 La Plata, £2 2s. 6d.	paid, 12s.
150 Devon Friendship,	150 Mona, £3 2s. 6d.	100 South Devon United,
10s. (£1 paid).	100 Michipicoten, 22s.	13s. 6d.
25 Derwent, £1.	149 Organos Gold, in one	70 Tamar Silver-Lead.
50 East Blue Hills, 12s. 6	lot, for £150.	20 Van, £7 1/2
200 E. Wh. Rose, £1 pd.	100 Parys, 14s. 31.	100 West Orebor, 5s. 6d.
170 E. W. Rose, 15s. paid.	100 Prince of Wales, 17s.	42 West Phoenix, £1.
20 Gawton, 16s.	110 Potosi, 11s.	70 Wheal Crebor, £3.
40 Hington Down, 21s. 6	65 South Darren, £1 1	144 Wheal J-well, 7s. 9d.
WANTED TO PURCHASE. SELLERS MUST NAME LOWEST PRICE:—		
40 Devon Great Consols.	500 Wheal Jane.	100 Gunnislake (Clitters).
50 Richmond.	30 Roman Gravel.	20 Great Laxey.



## Registration of New Companies.

The following joint-stock companies have been duly registered:

**ASSOCIATION OF JOHN WHITE AND COMPANY (Limited).**—Capital 5,000*l.*, in shares of 1*l.*. To purchase and carry on a collar, cuff, and shirt manufacturing business established at Ringwood, Southampton. The subscribers are—H. R. Morant, Ringwood, 400; A. Mitchell, Ringwood, 100; T. E. Mussell, Ringwood, 300; R. Jennings, Ringwood, 100; G. S. Stock, Ringwood, 10; J. White, Ringwood, 50; H. G. Dyer, Ringwood, 5.

**PORTSMOUTH HARBOUR PORTLAND CEMENT WORKS COMPANY (Limited).**—Capital 20,000*l.*, in shares of 25*l.*. The manufacture of Portland, Roman, and other cements, limes, concrete, &c. The subscribers are—C. Mumby, Portsmouth, 10; R. Balliston, Gosport, 10; R. Ford, Portsmouth, 10; H. W. Bryerley, Landport, 10; A. H. Ford, Portsmouth, 10; H. J. C. Martin, Gosport, 10; W. Payne, Portsea, 1; W. Edmunds, Portsmouth, 1.

**TITANIA STEAMSHIP COMPANY (Limited).**—Capital 30,000*l.*, in shares of 1*l.*. The purchasing, owning, and working said steamship. The subscribers (who take one share each) are—J. Bowring, Liverpool; W. B. Bowring, Liverpool; W. G. Band, Liverpool; W. Williams, Liverpool; F. H. Annanier, Liverpool; E. Bowring, Liverpool; C. T. Bowring, Liverpool.

**THE NORTHERN MARINE ENGINEERING COMPANY (Limited).**—Capital 25,000*l.*, in shares of 10*l.*. The business of engineers, iron-founders, manufacturers, and dealers in all kinds of metals, &c. The subscribers are—W. J. Jobling, Newcastle-on-Tyne, 50; J. Dent, jun., Newcastle-on-Tyne, 1; W. S. Vaughan, Newcastle-on-Tyne, 1; J. Nelson, Newcastle-on-Tyne, 1; S. A. Morrison, North Shields, 1; J. K. Moffat, Tyne Dock, 10; C. J. Dymond, Newcastle-on-Tyne, 1.

**ANGLO-CONTINENTAL ELECTRO MEDICAL VAPOR BATHS COMPANY (Limited).**—Capital 240,000*l.*, in shares of 10*l.*. To establish and conduct in the United Kingdom and abroad bathing establishments. The subscribers (who take one share each) are—A. F. Stokes, 5, Birch-lane; F. Wingrove, Hammersmith; M. Heslop, Gresham House; J. Davies, Gresham House; J. Alexander, Bricklayers Arms station; W. H. Hem, 35, Finsbury Pavement; J. R. Moorif, Rotherhithe.

**THE "HILDEGARDE" STEAMSHIP COMPANY (Limited).**—Capital 20,400*l.*, in shares of 155*l.*. A shipowner's business in all branches. The subscribers are—H. Bovey, 85, Gracechurch-street, 4; R. Holman, 23, St. Mary Axe, 2; J. Barrett, 3, Soho-square, 4; J. D. Trehanne, 14, London-street, 2; F. Primavesi, Cardiff, 4; J. Bovey, Cardiff, 4; H. Sleigh, Leek, 3.

**THE LIVERPOOL COTTON EXCHANGE (Limited).**—Capital 50,000*l.*, in shares of 100*l.*. To provide, regulate, and maintain a building or rooms for a cotton exchange. The subscribers (who take one share each) are—A. B. Forwood, Liverpool; F. Muir, Liverpool; T. B. Forwood, Liverpool; B. F. Bobcock, Liverpool; F. F. Herzog, Liverpool; A. Brome, Liverpool; W. D. Hayne, Liverpool; E. K. Barnes, Liverpool; R. Newgass, Liverpool.

**THE ELECTRIC APPLIANCES MANUFACTURING COMPANY.**—(Limited).—Capital 50,000*l.*, in shares of 1*l.*. To acquire and continue an established business, situated at 324, Little Britain, and belonging to H. J. Dale. The subscribers (who take one share each) are—P. Luscombe, 38, Poplar Walk-road; F. W. Hodges, 5, Salters' Hall-court; J. Dellamy, Forest Hill; W. Dunlop, St. Peter's Park; W. R. Powell, Brockley; W. H. Russell, Gravesend; A. L. Nimmo, 20, Abingdon-street.

**THE MANCHESTER UNDERWRITERS' ASSOCIATION (Limited).**—Capital 250,000*l.*, in shares of 5*l.*. To carry on a marine insurance business in all its branches. The subscribers (who take 500 shares each) are—G. Robertson, Manchester; O. Hulme, Manchester; J. A. Bath, Manchester; J. E. Layson, Manchester; A. Provand, Manchester; A. J. Orr, Manchester; J. Bythell, Manchester; F. Tarazzi, Manchester; R. Jeune, Manchester; C. T. Galloway, Manchester; J. Galloway, Old Trafford; J. Ryland, Stretford; J. Hill, Manchester; E. C. Graddum, Manchester; J. Galloway, jun., Manchester; T. G. Hill, Manchester.

**THE YORKSHIRE LEAD MINES (Limited).**—Capital 65,000*l.*, in shares of 1*l.*. To carry out a contract entered into between F. Cookson of the one part, and J. K. Lamb, as trustee to the company, for acquiring the interest in certain lead mines, mineral rights, and properties, situated at Hurst, in the parish of Marrick, Yorks, known as the Hurst Lead Mines, together with the lease thereof, and to explore, develop, and work all or any of the said mines. The subscribers (who take one share each) are—T. M. Roby, Wimbeldon, retired captain; A. North, Kingsbury, accountant; E. G. Fellowes, 3 and 4, Great Winchester-street Buildings, broker; F. G. Fellowes, 3, Budge-row, no occupation; R. A. Burnell, Shepherd's Bush, commission merchant; J. E. Harding, Camberwell, accountant; A. Garratt, Walworth, civil engineer. The subscribers determine the first directors, whose number must not exceed seven, or be less than three.

**L'UNION ESTATE COMPANY (Limited).**—Capital 30,000*l.*, in shares of 20*l.*. To purchase, cultivate, and work as sugar estates plantations situated in British Guiana. The subscribers are—A. Lambert, 9, St. Helen's-place, 15; E. L. Marshall, 9, St. Helen's-place, 15; W. A. Raikes, Temple, 15; H. Scott, 79, Tuffnell Park-road, 1; W. J. Gill, 23, Red Lion-square, 1; G. W. Santell, 16, Tavistock-square, 1; J. A. Hanham, 9, St. Helen's-place, 1; M. J. Wheatley, 2, Cromwell-crescent, 15.

**NOUVEAU MONDE MORTGAGE COMPANY (Limited).**—Capital 70,000*l.*, in shares of 1*l.*. To advance to the Nouveau Monde Company, or any other company, moneys for the purchase of the Nacupal Mines, in Venezuela, and for the necessary expenses for working same, and for paying expenses already incurred by the Nouveau Monde Company. The subscribers (who take one share each) are—W. E. Koch, 107, Philbrick Gardens; D. Falche, 12, Castletown-road; J. Bowne, 10, Pembridge Villas; W. E. Perry, South Lambeth; F. Ilborough, 3, Adelphi-terrace; J. C. Law, 23, Leadenhall-street; A. Conder, St. Clement's House.

**CHARLES TOOLEY STEPHENSON AND SONS (Limited).**—Capital 10,000*l.*, in shares of 5*l.*. To acquire and continue a general engineers, manufacturers, shipbuilders, and tool makers' business in Lincolnshire. The subscribers are—W. Stephenson, Liverpool, 100; J. W. Walker, Skiffeld, 1; C. R. Stephenson, Skirbeck, 100; R. W. H. McDowell, 24, Ashby-road, 1; T. Stephenson, Skirbeck, 100; J. H. Stephenson, Skirbeck; B. W. Stephenson, Boston, 1.

**BRITISH UNION COPPER COMPANY (Limited).**—Capital 100,000*l.*, in shares of 1*l.*. To purchase underleases upon the terms of an agreement, and acquire the working of the Eytan Copper Works at Mostyn, Flintshire; also the Cliff, Glenrock, and Valley, in the county of Cork. The subscribers (who take one share each) are—J. Bennett, Croydon; A. V. A. Powys, 1, Lincoln's Inn Fields; C. E. Kay, 9, Fenchurch-street; A. J. Lewis, Tressillian-road; H. H. Swinny, 9, Fenchurch-street; W. Radcliffe, 10, Arundel-street; R. C. C. White, Highgate.

**THE HALIFAX HUDDERSFIELD UNION BANKING COMPANY AND THE MANNINGTON GASLIGHT AND COKE COMPANY** are incorporated under the Limited Liability Companies Acts.

**THE CRAWFORD SPINNING COMPANY (Limited).**—Capital 100,000*l.*, in shares of 5*l.*. To carry on a cotton spinning business at Rochdale. The subscribers (who take one share each) are—John A. Bright, Rochdale; F. G. Crowther, Rochdale; W. T. Heap, Rochdale; W. Hill, Rochdale; J. Leach, Rochdale; J. S. Littlewood, Rochdale; H. Shawcross, Rochdale; J. Turner, Rochdale; S. Tweedale, Rochdale.

**CAMBRIAN STEAMSHIP COMPANY (Limited).**—Capital 23,000*l.*, in shares of 100*l.*. The purchasing, owning, and working of said vessel. The subscribers (who take one share each) are—J. Jackson, Whitehaven; J. L. Gwail, Whitehaven; P. H. Huddart, Whitehaven; G. Jackson, Whitehaven; J. Band, Whitehaven; A. Helder, Whitehaven; H. Kitchen, St. Bees.

**THE MATLOCK BATH, PAVILION, AND GARDENS COMPANY (Limited).**—Capital 12,000*l.*, in shares of 1*l.*. Providing enclosed gardens, recreation grounds, assembly rooms, &c. The subscribers (who take one share each) are—C. A. Peters, Matlock Bath; J. W. Wheatcroft, Matlock Bath; J. A. Wheatcroft, Crawford; H. Buxton, Matlock

Bath; F. Hartle, Matlock Bath; S. Robinson, Matlock Bath; S. Skidmore, Matlock Bath.

**THE PUBLIC WORKS SYNDICATE (Limited).**—Capital 250,000*l.*, in shares of 25*l.* and 5*l.*. To promote and assist any enterprise for the construction of railways, tramways, docks, waterworks, lighting by gas, electricity, &c. The subscribers (who take one share each) are—J. Hardcastle, Hampstead; E. J. Squiers, St. Leonard-on-Sea; J. Wilkinson, Tottenham; H. A. Taylor, 112, Cannon-street; T. Floyd, 3, Victoria Mansions; W. A. Spain, 76, Coleman-street; S. Maidhews, Sidcup.

**THE RIVER PLATE TELEPHONE AND ELECTRIC LIGHT COMPANY (Limited).**—Capital 100,000*l.*, in shares of 5*l.*. To carry on the business in all its branches of a telephone, electric light, heat, and power supply company. The subscribers (who take one share each) are—Sir J. Vogel, 135, Cromwell-road; F. A. Gower, 9, Great Winchester-street; P. E. Carnegie, Norwood; C. Curtoys, 6, Lombard-street; T. Taunton, 6, Lombard street; P. A. Dalton, Addiscombe; T. L. Scott, Lewisham.

## THE COPPER TRADE.

Messrs. HENRY R. MERTON and Co. (Leadenhall-street), Jan. 31, issue the following Statistics of Copper:—

Stocks in Europe:—	Tons	Value
Chili bars, Liverpool and Swansea	23,069	936
Chili ingots, Liverpool and Swansea	1,508	60
Chili ores and regulus, Liverpool and Swansea (fine)	1,508	60
Other ores and regulus stuff, Liverpool and Swansea (fine)	2,280	91
London, Foreign copper (chiefly Australian) and Landing	7,252	290
Chili bars, ingots and barilla in Havre	2,503	100
Other copper in Havre	590	24
Afloat, and chartered from Chili to Europe (advised by mail):		
Ore and regulus (fine)	2,280	91
Bars and ingots	3,329	133
By cable, ore and regulus (fine)	750	30
Bars and ingots	4,500	180
Afloat from Australia to Europe (advised by mail):		
Fine copper	1,768	71
By cable: Fine copper	2,552	102
Total	53,927	2,167

Price of Chili bars, 64*l.* per ton.

Messrs. HARRINGTON, HORAN, and Co. (Jan. 31) write:—Chili copper charters for 31st half of this month were advised by cablegram on the 15th instant as 2000 tons bars and ingots, of which 300 tons are for France. Price of bars was 81*l.* 27*l.*, and Exchange 56*l.*. Yesterday advice of charters for second half of the month came to hand, giving quantity as 1800 tons fine, of which 550 tons bars and ingots, together with 450 tons furnace material, are for England, and 700 tons bars for orders here or Continent. Price of bars was 81*l.* 45, and Exchange 55*l.* 3*l.*. During the past fortnight business generally has been very unsettled, and a gloomy feeling has prevailed, enhanced by continental embarrasments depressing home stocks, and having a like adverse effect on metals. Chili bars fluctuated between 65*l.* 2*l.* 6*l.* and 55*l.* 10*l.* spot, but when yesterday it was known that the Bank of England rate of discount had been advanced from 5 to 6 per cent., and with probabilities of a still higher rate owing to the large withdrawals of gold for France, the price quickly gave way, and sales were effected down to 53*l.* 15*l.*, at which rate we close steady to-day. Sellers of furnace material are holding for higher than marketable rates, and the only sales have been 300 tons Italian ore to arrive here at 13*l.*, and 970 tons ores (average produce 9*l.* 4 per cent.) which realised 12*l.* 9*l.* 4 per unit at the Swansea Ticketing on Jan. 17. Import of Chili copper during the past fortnight, 333 tons fine, against 155 tons fine same time last year; delivery, 312 tons, against 1292 tons; import of other copper, 1106 tons, against 1718 tons; delivery, 456 tons, against 2215 tons. Arrivals here during the fortnight of West Coast S.A. produce—Aconagua, from Valparaiso, with 343 tons bars and 250 tons ingots; Camana, from Guayaquil, with 40 tons bars. At Swansea—nil. Stocks of copper (Chilian and Bolivian) in first and second hands, likely to be available, we estimate at—

	Ores.	Regulus.	Bars.	Ingots.	Barilla.
Liverpool	—	—	14,015	926	—
Swansea	—	3,346	9,015	—	—
Total	—	3,346	23,069	936	—

Representing about 25,511 tons fine copper, against 25,490 tons 14th inst.; 31,340 tons Jan. 31, 1881; 30,506 tons Jan. 30, 1880; 27,060 tons Jan. 31, 1879. Stock of copper contained in other foreign ore and Spanish precipitate, 2280 tons fine, against 977 tons Jan. 31, 1881. Stock of Chili bars and ingots in Havre, 2465 tons fine, against 5727 tons Jan. 31, 1881. Stock of Coro Coro barilla in Havre, 25 tons fine, against 113 tons Jan. 31, 1881. Stock of copper other than Chili in Havre, 590 tons fine, against 793 tons Jan. 31, 1881. Stock of Chili copper afloat and chartered for to date, 12,200 tons fine, against 14,500 tons Jan. 31, 1881. Stock of foreign copper in London, chiefly Australian, 7850 tons fine, against 6955 tons Jan. 31, 1881.

Messrs. RICHARDSON and Co. (Feb. 1) write that the stocks of Chili copper produce remaining unsold at Swansea on Dec. 31 were—Regulus, 3246 tons, no arrivals, no sales since; copper, 9615 tons, of which 565 tons have been sold. The present stocks are—Chili regulus, 3246 tons; copper, 9551 tons; New Quebrada ore, 2380 tons; Newfoundland ore, 2344 tons; Spanish precipitate, 154 tons; Portuguese ore, 323 tons; precipitate, 29 tons; Italian ore, 192 tons; French ore, 92 tons; Dutch ore, 20 tons; British ore, 304 tons; so that the total unsold at Swansea is—Ore, 6545 tons; regulus, 3246 tons; copper, 9551 tons; and precipitate, 133 tons; representing about 11,200 tons of fine copper. There have been no private sales of produce here reported. The Chili charter advised for the last month are—First half, 1700 tons in bars for England and 300 tons for France; and for the second half, 650 tons bars and ingots, 450 tons pure in furnace material for England, and 700 tons bars for orders England or the Continent. Our copper market, which commenced the year very firm, with a tendency to improvement, has been disappointing, but probably only attributable to the forced sales that have taken place, caused among

other events by the political changes that have been so disturbing France. The financial difficulties reported from the same quarter have, no doubt, materially helped the fall in values.

## THE TIN TRADE.

Messrs. EBELING and HAVELAAR (Rotterdam, Feb. 1): There has been considerable irregularity in our tin market during the past month. The heavy shipments for December, both from Australia and the Straits, caused at first some uneasiness amongst holders, and a decline of about 1*l.* 5*l.* was the immediate consequence. Operators, however, soon regained courage, and with large daily transactions prices advanced 4*l.* during the next fortnight. The monetary crisis in Paris arrested the upward movement, and with only small sales there was a fall of 2*l.*. The advance of the London Bank rate to 6 per cent., and a sudden collapse in London from 111*l.* to 107*l.*, further depressed the value of the article, prices declining another 1*l.* 5*l.*. The total statistics for the past year show an excess of consumption over production of no less than 4000 tons; this is a most important item, which should well be borne in mind by all operators in tin. The Dutch Trading Company's first sale in 1882 took place yesterday, when 23,344 slabs Banca were sold from 65*l.* 5*l.* to 66*l.*; average 65*l.* 5*l.*. Next sale will be held towards the end of March.—Banca: There was some pressure at the beginning of the month, the price for 14 days' prompt declining to 55*l.* 4*l.*. A large speculative demand then sprang up, and an advance of 3*l.* 4*l.* to 4*l.* was the result. The enhanced rates bringing out a good many sellers, the prices declined 2*l.*. Since the sale there are buyers at 55*l.* 4*l.*. Billiton has experienced about the same fluctuations in price. Transactions have been extensive, more especially towards the middle of the month, when forward deliveries were in great favour with speculators. There are now buyers at from 55*l.* 4*l.* on Tuesday, Feb. 20, a public sale of 13,000 peculs Billiton will take place at Batavia. The position of Banca tin in Holland on Jan. 31, according to the Official Returns of the Dutch Trading Company, was—

	1882.	1881.	1880.
Import in January	16,935	10,261	9,569
Deliveries in January	6,900	9,238	9,012
Stock second hand	43,544	50,285	59,687
Unsold Stock	52,656	45,797	32,136
Total stock	96,200	56,062	91,293
Afloat	4,800	4,900	4,200

Statement of Billiton:—  
Import in January Slabs 12,443 ..... 8,200 ..... 2,630  
Deliveries in January ..... 7,677 ..... 6,890 ..... 6,170  
Stock ..... 29,737 ..... 53,239 ..... 53,714  
Afloat ..... 18,000 ..... 11,000 ..... 9,000  
Quotation, Jan. 31—Banca ..... 65*l.* 5*l.* ..... 54*l.* 5*l.* ..... 59*l.* 4*l.*  
Billiton ..... 65*l.* 4*l.* ..... 54*l.* 5*l.* ..... 59*l.* 4*l.*

These combined returns of Banca and Billiton for 1882, compared with those for 1881, exhibit—An increase of the import for January of 241 tons; a decrease of the deliveries for January of 48 tons; a decrease of the stock second-hand of 1095 tons; an increase of the unsold stock of 214 tons; a decrease of the total stock of 791 tons; an advance of the quotation of Banca of 18*l.* 6*l.* per ton.

The Government Returns for the month of November are as follows:—

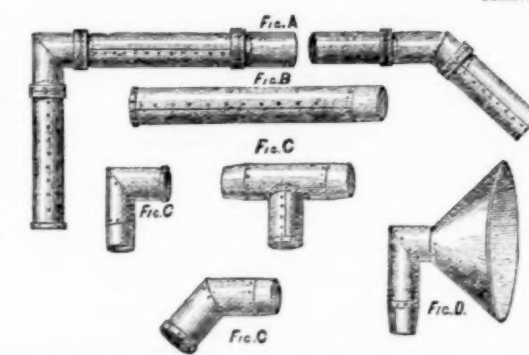
	November.	Eleven Months.
	1881. 1880. 1879.	1881. 1880. 1879.
To Germany	317 ... 154 ... 259	3575 ... 2969 ... 2666
England	3 ... 95 ... 31	552 ... 1273 ... 516
Belgium	98 ... 137 ... 80	1717 ... 2335 ... 1320
France	44 ... 21 ... 36	477 ... 581 ... 464
Hamburg	36 ... 59 ... 10	623 ... 767 ... 329
The United States	— ... — ... —	139 ... 368 ... 348
Other countries	52 ... 26 ... 17	783 ... 703 ... 465
Total	550 ... 492 ... 443	7662 ... 8956 ... 6328

**KAISER-I-HIND GOLD MINING COMPANY.**—The report of the directors for the period ended Dec. 31 states that since the meeting in May the assignment of the lease of the property has been completed, and the purchase-money was paid in July. A staff of miners under Capt. S. R. Tonkin, engaged in London, reached India towards the end of June. The health of those employed about the mine continues good, and the medical officers report that the site of the camp is extremely good. The arrangements made for disposing of the three blocks of 150 acres each have not been completed. It has been deemed advisable to work the first of these blocks in connection with the 190 acre block originally reserved for the company's own operations. The report of Mr. W. Bell Davies, which is appended to that of the directors, states that the Kaiser-I-Hind property is situated on a system of reefs running nearly parallel to those in the Nundydroog, Oregum, and Mysore companies' blocks in rocks of a similar geological formation (metamorphic schists), and is distant rather more than ½ mile to the westward of them. The camp consists of four good dwelling-houses for Europeans, built of sun-dried bricks with tile roofs; two temporary stores, 66 ft. by 16 ft. and 30 ft. by 12 ft., respectively; temporary carpenter's and smith's shops; six temporary cooking-houses; also a powder-magazine of sun-dried bricks, erected at a safe distance from all buildings. The coolie lines have been put up ¼ mile from where the Europeans are living, and consists of ten mat-houses; the houses are divided into two dwellings, each dwelling to accommodate one family: There is already some machinery on the ground, consisting of four elephant stamps with engines, one stone-crusher, one arrastre, two pairs of double cylinder winding engines, and two 10-in. single pumping engines, and a supply of 2½-inch pipes; any parts of the machinery liable to damage from rust or exposure have been placed in the stores, and are properly protected. Mining work was commenced in July with four Cornish miners. In Block No. 1 ten reefs have been cut, and in three instances gold is mentioned. Shaft No. 5 on the western reef is down 40 ft., the lode is 2½ ft. wide at the bottom, yielding a good show of gold. On the middle reef nothing of importance has been discovered. Shaft No. 4 on a reef dipping west, and 2½ ft. wide, gave a good washing of gold. Mr. Davies states that from the south-eastern group of reefs some very good washings can be obtained; he saw one sample of quartz from here containing visible gold. The large outcrop on Block No. 2 had not been worked sufficiently to enable him to form any opinion as to prospects. It is a point of much importance. Should this reef prove rich. Blocks Nos. 3 and 4 would at once become of great value. The examination of the reefs leaves no occasion for doubt that the

## COLLIERY VENTILATING TUBES.

WILLIAM THOMPSON,

MANUFACTURER OF



## COLLIERY VENTILATION TUBES.

Fig. A.—Shows the tubes adapted for any variation in direction.  
Fig. B.—Straight length of tube.  
Fig. C.—Different angle bends.  
Fig. D.—Is a hopper to receive air at top of shaft.

Highfield Works, Ettingshall, near WOLVERHAMPTON.

GOLD MEDAL AWARDED, PARIS EXHIBITION 1878.

THOMAS TURTON AND SONS,

MANUFACTURERS OF

MINING STEEL of every description.

CAST STEEL FOR TOOLS. CHISEL. SHEAR. BLISTER. & SPRING STEEL  
MINING TOOLS & FILES of superior quality.EDGE TOOLS, HAMMERS, PICKS, and all kinds of TOOLS for RAILWAYS, ENGINEERS, CONTRACTORS, and PLATELAYERS.  
LOCOMOTIVE ENGINE, RAILWAY CARRIAGE and WAGON SPRINGS and BUFFERS.

SHEAF WORKS &amp; SPRING WORKS, SHEFFIELD.

LONDON OFFICES—90, CANNON STREET, E.C.

PARIS DEPOT—12, RUE DES ARCHIVES.

BOSTON MASS., U.S.—40, KILBY STREET.



property contains true fissure veins, which may be relied on for permanence in depth and continuity in length; also that these reefs are auriferous. The reefs are being thoroughly tested in the most economical manner, but their ultimate success depends upon the number and size of the pay-shoots which may be developed. For this work considerable time will be required. The work already done is so far thoroughly satisfactory, and promises well for the future.

#### SUCCESSFUL MINING ENTERPRISE—THE LA PLATA.

In the midst of one of those periodical outcries now being heard about mining disappointments, resulting from the impatience of shareholders for results before there has been time for development, it is gratifying to find that declarations of dividend are made with such admirable regularity in established mines as to demonstrate the fallacy of the complaint. Even during the present week there has been a dividend of 30s. per share in East Pool, a Cornish mine, representing a large annual percentage upon the invested capital; and the Richmond has declared its usual quarterly dividend (the 31st) of 10s. per share, also representing a large annual percentage upon outlay, whilst on Tuesday the La Plata Mining and Smelting Company—the celebrated Leadville concern—paid its usual (being the 29th consecutive) monthly dividend at the very satisfactory rate of 12 per cent. per annum on the capital of the company, and the smelting statements show such a regular maintenance of the ore receipts, quantity smelted and product, that the company may fairly be classed among the permanently dividend paying properties.

The latest advices from the works are published in another column, but one or two statements in them may be here repeated. The manager states that the practical operation of the new plant for two weeks gives him liberty to state with much pride that the success is beyond anticipation. The new machinery has not given a moment's delay or a particle of trouble since starting the new furnace. The capacity has increased to a daily average of 160 tons. This addition, and the continued good work of the other furnaces, indicates a considerable increase in the earnings. Ores are still pressed on them to a considerable extent in excess of their capacity, and though they have many offers from the miners who would gladly become new customers, they have to refuse them. At the mine everything is in as healthy and prosperous a condition as usual. The manager could scarcely write in more favourable terms, and as 12 per cent dividends afford a substantial confirmation of his views, the shareholders, one and all, may well be congratulated upon their position and prospects.

#### RICHMOND CONSOLIDATED MINING COMPANY.

The directors declared the usual quarterly dividend (the 31st) of 10s. per share on Monday, and although for the moment the mine is not quite so rich as it has been, there appears to be no doubt that the profits will be maintained for many years to come. In announcing the dividend, the directors state that at the date of the half-yearly meeting—Dec. 13—the ore below the 600 level, which had been recently discovered, promised to open out to a large body of rich ore, and Mr. Rickard, who is now in England, says that when he left he never saw such a promising find as this one; and further that "although we have not yet found ore there in any quantity, there can be no doubt that it is there, and that we may cut it at any moment."

The fact of the ore body below the 600 not opening up so quickly as was anticipated, and the sudden falling off in the grade of the ore reserves, and consequent low returns from smelting, has lately afforded an opportunity to outside speculators—of which they have not been slow to avail themselves—of depreciating the value of the shares, and by their persistent efforts and adverse rumours they have succeeded in forcing the price of them down more than 30 per cent., selling many thousands of shares which they do not possess, and which they cannot deliver. The directors have seen this with regret, but they could do nothing to prevent it. It is true that the smelting returns throughout the month of November had been comparatively low, but the directors looked upon this as temporary only, and expected that as further ore bodies were discovered the returns would improve; low, however, as these returns were the accounts for that month, which have now come to hand, show a profit of over 100,000. It must be borne in mind that explorations are going on at many points besides the 600 level, new ground is being opened up on the 200, 300, 400, 500, 700, 800, 900, and 1200 levels, and that at several of these places indications for ore bodies are very promising, the most important being the drift in the 1200 level.

Mr. Probert, writing on Jan. 2 respecting the explorations in the mine, and the sudden falling off in the grade of the ore, which was as unexpected to him as it was to the directors, says:—"As regards the mine, the returns are very low again this week, only \$35,000 from 960 tons, and I am afraid to promise better results from the old chambers. None of the recent indications have come up to expectations in leading to new ore bodies. The limestone in the 1200 was not of a very promising character at first, but it is now getting harder and looking better; this is the most important drift we have as bearing on the future prospects of the mine, though earlier results may be looked for from the 700, 800, or 900 drifts, northerly from the main levels. We must have courage, and remember how rare a thing it is for a mine of the character of the Richmond to fail permanently; I have several times already seen what many people thought the bottom of the old mine, but it did not prove to be the bottom—nor do I think it will be in my time." The latest information as to the developments of the mine will be found in the detailed reports of Mr. Westcott, the assistant superintendent, dated Jan. 4 and Jan. 11, the first published in last week's *Mining Journal*, the second in another column to-day. From these reports it will be seen that whilst "the ore chambers are producing the usual quantity of ore of fair quality," the prospects for ore bodies are good in many places, particularly on the 200 and 300 level, the 600 north drift (from west drift), the 600 west drift (from north drift) in the 600 rise near No. 14 chute, and in the 1200 level, and that in fact the explorations in several places are already in ledge matter and low-grade ore. The shareholders must remember that pending the decision in the Albion suit the company (and also the Albion Company) are restrained by injunction from working in the disputed ground—and this interferes seriously with their underground operations, and prevents them from raising ore from this part of the mine, where it is in sight.

Lead has improved in price, and is now selling at New York at 5 to 5½ cents per lb. (20½ to 21½ per ton), and the company is sending it forward for sale as fast as possible, as they have a very large stock on hand—upwards of 12,000 tons. The price of silver has also improved. This increase in the price of silver and lead, and the economies introduced from time to time in the management of the mine, enable the company to work at a profit on ores of a much lower grade than they could formerly; and as very little outside ore is now purchased, there is a considerable decrease of expenditure in this respect. As soon as the ore opens up below the 600 level, or whenever it is cut in the 1200, or in any of the immediate levels—which may happen at any moment—the continued prosperity of the company will be assured, and the directors trust there will not be a repetition of the recent unscrupulous proceedings of persons whose only interest is to depreciate, for their own benefit, and wreck, if possible, the property of others.

AMERICAN MINES, AND ENGLISH COMPANIES.—The case of the Eureka Consolidated against the Richmond Consolidated has been decided within the last week by the Court of Appeal. This was an action by the former against the latter—an English registered company—for ejectment and damages for illegally extracting certain ore in Nevada, came before the Court on appeal from an order made by Justice Watkins Williams, directing that Mr. George Hopkins, the chairman, and Mr. Hubert Akers, the secretary of the defendant company, should appear and give evidence and produce the books and documents of the company at the United States Consulate under a commission issued by a country circuit in the United States.—Mr. Aquith now asked that the witnesses referred to should not be compelled to produce the books and documents, inasmuch as they were

in the legal possession of the Court and not of his clients.—Mr. Candy supported the order.—Their lordships reversed the order, with costs.

#### STOCK EXCHANGE MINE SHARE "CLOSING QUOTATIONS."

For several weeks complaints have been made of the "daily quotations" in the Stock Exchange List of the "closing prices" not only in the "British Mine Share List," but of the "Foreign List" also. The complaints are that the "closing list" of prices put in emanates from one or two brokers or dealers, and are constantly at variance with the real market prices of the day; very frequently, it is suggested, through possible prejudice or ignorance of the actual prices. Under these circumstances the prices inserted are only misleading to the general public, whether they desire to buy or sell. If this state of things exist the sooner it is altered the better for all concerned. The committee of the Stock Exchange, it appears, are not responsible for the "closing quotations" of "mine shares" or other "stocks and shares," but surely they should have a voice against any abuse of any privilege a member may have conferred in him, so as to see that fair closing prices of whatever description of mine or other stocks and shares are daily sent out to the public from that institution, otherwise the prices can only become misleading and mischievous, and which can but militate against an increase of business of a bona fide character. It is stated that several of our large dividend mines are not quoted on the Stock Exchange—such as Dolcoath, East Pool, Carn Brea, Minera, Crebor, Wheal Crebor—the true close dealing and "closing prices" of which can always be had of any respectable mining share broker or dealer either in London or Cornwall.

#### THE LIABILITY OF SHAREHOLDERS.

The question of the liability of shareholders is very fairly raised by the letter of Mr. WILLIS, of Folkestone, published in another column of to-day's *Journal*. There has of late been considerable discussion in the *Mining Journal* as to the relative merits of the Cost-book System and Limited Liability respectively for facilitating mining enterprise, and in the result it has been demonstrated that the sole recommendation of the Cost-book System is that under it there is less difficulty in binding shareholders to forlorn hopes, and that it relieves share-dealing officials of mining companies of the annoying inconvenience of that periodical check which shareholders have over them in the successive reconstitution which takes place under the Limited Liability System. It need scarcely be again explained that under the Limited Liability the company is formed with a nominal capital representing the amount which is considered sufficient for the purchase of the property, and to provide the working capital necessary to bring it into profitable working order. The inconvenience of this from a promoter's point of view is that the amount to be taken as purchase money must be publicly stated, and that when the working capital alleged to be ample has been exhausted the executive must give an account of their stewardship as an inducement for the shareholders to supply more funds. As it frequently happens that between the formation of the company and its reconstruction the promoters and officers have been much more earnestly engaged in market operations in the shares than in attempting to get the mine tested, it is scarcely more pleasant to face deluded shareholders than to stand before an infuriated bull without chance of escape.

The Cost-book System avoids all this. The promoters never tell their gains, but simply meet together, declare the concern to consist of 2000 or 20,000 shares, as their conscience, or their want of it, dictates; declare the shares to be perhaps 6s. paid; and declare that Capt. Allmenstool has made a highly favourable report upon the prospects of the enterprise. Nothing remains but to make the market for the shares, and by risking an amount far below the sum that would be required to introduce a Limited Liability concern, the market is "rigged," and the public are got in at a heavy premium; the difference between the 6s. which the promoter has to pay to the purser and the price at which the share is sold representing the purchase-money charged to the public. The promoters and officers have never to face the shareholders for reconstruction, but drain them shilling by shilling, for the majority of Cost-book concerns make calls with creditable regularity, at the frequent meetings utilising the circumstance that the most disappointed shareholder may consider each new hope held out to him as worth a shilling per share further risk, until in despair he avails himself of the much vaunted privilege of relinquishment, and thus sacrifices all he has paid for the sole advantage of avoiding further liability.

Now, in the case of Wheal Coates the original constitution was Limited Liability, but in December last some of the shareholders thought proper to convert it into a Cost-book concern, and Mr. Willis was one of those who did not care to exchange a known liability for an unknown one; he, therefore, gave notice, in accordance with the Act of Parliament, that he required to be bought out. So far, however, from the liquidator at once proceeding to comply with the Act and purchase his interest, he appears to have overlooked the dissent and the law, and now coolly suggests that there may be a return of 2s. per share—whilst Mr. Willis is entitled to more than ten times that amount—and demands a call of 1s. 6d. per share made by the Cost-book company, in which, if the facts be correctly stated, Mr. Willis is not even a shareholder. It is indeed extremely questionable whether the law sanctions any such conversion as is alleged to have been made, for to suppose that a man who has entered a partnership of the basis of Limited Liability can be deprived of that protection by the vote of any meeting is simply monstrous, and an insult to our legal system; and there seems to be no doubt that the Wheal Coates Cost-book Company are powerless to enforce any call against any shareholder who has not formally declared himself a member of the Cost-book company. Every holder of shares in the Limited Liability company should thoroughly understand that he can only be made a member of the Cost-book concern by some act of his own—such as the payment of the 1s. 6d. call now asked for; and that it is by no means improbable that the attempt to effect the conversion without complying with the Act as to purchasing the interest of dissentient shareholders may result in ruinous litigation.

From Mr. JOHN B. REYNOLDS:—The course of the Markets has been far from satisfactory. The railway dividends have been disappointing, but we are at a loss to know upon what grounds larger profits were expected. During the past twelve months trade has only been gradually reviving from fearful depression, and that dividends have kept up as they have speaks volumes in favour of this description of investment. We are decidedly inclined to the opinion that those who buy our leading railway stocks just now will do well. As against the probability of an immediate rise of any importance, however, it must be remembered that money threatens to become still dearer, and large speculative accounts are open.

Mines look brighter, and good shares are more in demand. The East Pool meeting has produced an excellent effect, and the 3s. dividend was eminently satisfactory. The more so as our old friends the "bears" have been doing their best to make people believe that a different result might be expected. By the way, "bears" are very stupid. They do not try to discriminate as between the bad and the good, but run down everything. When tin not long ago was at 80s., for instance, they would persist in saying that it would go to 40s., and when Dolcoath was at 50s. they kept on saying the shares would go to 20s. When West Kittys were at 40s. the people who ventured to buy were pronounced to be incapable of managing their own affairs, and the mine was called by a questionable name, and its advocates by a worse one. It is natural, therefore, that we should be told that West Kittys are now at an absurd price, and that no one should buy them. Judging from this gratuitous opinion and past experience we can only gather that now is the very time to buy. Our friends the "bears" are very useful if we take care to do the very opposite to that which they advise. What were East Pools selling at six months before dividends were about to be declared? Does anyone want to know the truth about West Kitty? Let him have the mine inspected, and he will soon find out. A word to the wise is sufficient.

By the way what about Wheal Coates? The Cornish papers appear to be in a fog about this company. Some say it is re-formed; others that it is transformed into Cost-book, and no end of rumours are abroad. Why so much interest in this mine? True, it is near New Kitty, West Polbren, and Trevaunance, but what of that? The real reason undoubtedly is that Wheal Coates has the Wheal Kitty lode. It seems incredible, but this mine has recently been sold out and out for 12500. It was offered far and wide by advertisements and bills, and the result was that 12550, was the highest if not the only tender. So Wheal Coates (Limited) is almost buried, and will soon be heard of no more. The company was neither transformed nor re-formed, nor anything of the kind, but is being absolutely wound-up, and its first and last dividend will soon be paid. It will never be called Wheal Coates (Limited) again. Then what will it be called?

What? Why Wheal Coates (Cost-book with "no credit") simply. The new company, under entirely new management, has commenced its business. The mine is divided into 12,000 parts or shares, and to-day these shares are almost giving away? What will they be worth in twelve months time? Echo answers—What?

#### METALLURGICAL FURNACES FOR COPPER.

An invention, based on the fact that reactions in metallurgical furnaces are influenced by the nature of the lining, has been patented by Mr. JULES GARNIER, of Paris, who remarks that in the operations of refining metals such as copper, the linings of the furnaces have hitherto been silicious, and the only matters easily eliminated are those which by oxidation form readily fusible bases, while those, such as arsenic, antimony, and phosphorus, which form acids, are not easily eliminated. Having regard to these facts, a reverberatory furnace for refining copper was, by way of experiment, made with a hearth of fritted lime, upon which was placed a layer of raw limestone and lime covered with peroxide of manganese. The furnace was then charged with arsenical copper containing a little sulphur and iron, as obtained from Rio Tinto, and the arsenical copper melted by an oxidising current of air. The fire was then urged, and the scoria on being skimmed off was found to already contain a very large proportion of arsenic, the quantity of which in the copper was reduced by this one operation from 1·12 per cent. to 0·360 per cent. The copper was then again oxidised, and a little lime added as a base, and after resmelting and urging the fire, the quantity of arsenic contained was still further reduced to 0·143 per cent. By this time also the whole of the iron and sulphur had disappeared. As, however, a regenerative furnace was not employed the arsenious scoriae were not sufficiently acid to be readily fusible, they adhered to the sides, and on "poling" a portion of the arseniate formed was reduced and became again mixed with the metal. The copper when introduced into the furnace contained 0·320 per cent. of iron, whereas at the close of the operation it contained but 0·030 per cent.

Considering these and other experiments which it is unnecessary to particularise, Mr. Garnier has devised a process which consists in a method of eliminating the arsenic, antimony, and phosphorus from crude copper or matt by refining on a hearth of basic material, on which at each operation is spread a layer of basic and oxidising matters, such as lime or magnesia, raw limestones, or dolomites, with peroxide of manganese, litharge, fluor spar, &c. The proportion of basic fluxes should be sufficient to thoroughly saturate the acidifiable impurities of the matt or crude copper, while the carbonic acid disengaged from the carbonates stirs up and more or less oxidises the charge. The copper and matt are treated in the manner above described, that is to say, they are melted under an oxidising blast, the fire is then urged, the slag skimmed off, the oxidation recommenced, and skimming repeated until the acidifiable impurities are almost entirely eliminated. The iron contained in the crude copper or matt is oxidised and partly removed with the slag, but the whole of the iron cannot be economically removed in this way, and it is therefore necessary to eliminate it a separate operation upon a silicious hearth either before or after the elimination of the acidifiable impurities. It is generally preferable to refine the copper on a silicious hearth until it contains not more than about one-half per cent. of iron, and then to refine it on a basic hearth as above mentioned, so as to eliminate the remainder of the iron and sulphur it contains and particularly the arsenic, antimony, or phosphorus. The operation may be much more rapidly effected if for the basic furnace the high temperature of a regenerative furnace be available and a revolving hearth be employed, which brings all the molecules of the metal well into contact with the basic lining. The stationary hearth is made of lime or calcined dolomite agglomerated with clay in such proportions as to be fritted by the heat. The sides of the furnace are rammed with this material and then surmounted by a thin parting course of lime or pure magnesia, or even of alumina, which neither melts with the silica of the bricks of the arch, nor with the basic material of the walls; the arch is then built with silica bricks in the ordinary way. The hearth, properly so called, is fritted in thin layers at the same time as the basic mixture of the walls. If the hearth is rotary he lines its sides with basic bricks, and makes the hearth within this boundary as described.

#### VENEZUELAN INDUSTRY—CARUPANO SILVER MINING COMPANY.

—The superintendent-in-chief—Mr. T. Ormsbee—in a letter published in the Port-of-Spain Gazette of Dec. 31, says: Permit me in the outset to correct the false impression made upon your mind by the printed statements you refer to, that any mines exist here—a small extent of territory lies in this vicinity, upon the surface of which, during the past 30 years, more or less mineral ore has been found, also some in pockets, but I am not aware that a vein of mineral ore of any kind has ever been opened here. With respect to the quality of the ore thus found, I am ill-prepared to speak, as the company I represent has not been working pockets for float ore, but has sought for true vein deposits of value, though I am compelled to admit, without success. I have no knowledge of the product of but a single shipment of ore, that was galena, and supposed to contain a fair proportion of silver, yet the returns showed 40 per cent. lead and but \$3 of silver to the ton. There are places from which some copper ore has been taken, but of its value I am unadvised, and I have heard that sulphur has been discovered at another point, but have understood it could not be worked profitably, though the reason was not stated. Were the holders of the concessions of these lands sufficiently advised as to the risks and expense of exploration of such volcanic territory, the necessity of reasonably liberal arrangements with persons or companies who employ large capital and the most experienced and skilled employees to prospect these lands in a manner to develop their value as mineral lands, if they have such a value, or were they even good business men, the country might hope for a development soon. It is thought by many that the so-called "proprietary" of these lands have no confidence in their mineral-bearing qualities, that they dare not have a thorough development made, consequently continue to pursue the practise of working up a confidence by now and then publishing the bombastic articles you speak of, which each time enables them to dispose of more shares in these lands, from which they seem to exist until the next favourable opportunity to take in another stranger.

HEATING FURNACE FOR IRON AND STEEL MANUFACTURE.—In order that the slag formed in the furnace may be readily and effectually removed and a dry bottom secured, Mr. THOS. ADAMS, of Brierley Hill, proposes to incline the bed of the furnace downwards, both from the fire bridge end and the flue bridge end, the lowest part of the bed being opposite the first working hole of the furnace. At the back of the furnace and opposite the first working hole of the furnace is a tap hole, out of which the molten slag passes from the furnace. This tap hole opens into a horizontal trough, having at the underside of its end most distant from the furnace a hole, out of which the slag passing from the furnace along the said trough runs. A loose cover or movable inverted trough is placed on the said trough during the working of the furnace. The slag collecting at the lowest part of the bed of the furnace accumulates in a depression, into which the tap hole opens. In using the furnace the tap hole is filled with oxide of iron, the filling of the tap hole with the said oxide being effected by the temporary removal of the loose cover of the trough and the introduction of the oxide into the tap hole from the outside of the furnace. The cover of the trough is replaced immediately after the closing of the tap hole. When by the working of the furnace the slag has filled or nearly filled the depression made for its reception, and it is desired to permit the escape of the slag, the workman introduces an iron rod into the front working hole, and passing its end across the furnace forces the oxide out of the tap hole, and the molten slag runs from the said receptacle through the trough and out of the hole in its underside, and is received in a wagon or other receptacle placed under the said hole for the purpose of receiving it. By constructing and arranging the parts of the furnace in the manner described the slag is collected at the hottest part of the furnace, and as the opening at which it passes from the furnace is only opened occasionally, and then only for a short time, the temperature of the furnace is not reduced by the continuous entrance of air at the slag hole, as in furnaces where the slag is allowed to run



from the furnace in a continuous stream. From the high temperature to which the slag has been exposed it forms an excellent fettling for puddling furnaces.

### Meetings of Public Companies.

#### COED MAWR POOL AND FRIDD LEAD MINING COMPANY.

The statutory meeting of the shareholders was held at the company's office, London Wall, on Jan. 26.

Major Ross in the chair.

The SECRETARY read the notice convening the meeting.

The CHAIRMAN said that this being the statutory meeting the directors had no formal report or statement of accounts to lay before the shareholders. He would, however, briefly state what had been done since the company was registered, four months ago. The company had purchased the lead mine Coed Mawr Pool and Fridd, with plant, machinery, stores, &c., on favourable terms, and the vendors, who had expended a considerable sum of money in the development of the property, have accepted the whole of the purchase-money in fully paid shares, besides subscribing for 2000 ordinary shares. This company is thus placed in exceptionally favourable circumstances, as every penny of the subscribed capital will be devoted to the development of the mines. These have been fully proved to be rich in mineral. In the 28 fm. level—the greatest depth reached—by the directors had seen the lode, which contains a body of solid lead in the least expensive and most expeditious manner. The driving of this lode is to be carried on by rock-drills, as being cheaper and quicker than hand-labour. The directors endeavoured to get contracts for driving this adit, but the sum asked seemed to them to be extravagant, and by the advice of those having great practical experience they decided to purchase the machinery and do the work themselves. They remitted to a committee of their number, consisting of the Chairman and Mr. Wm. Keith, jun., of Aberdeen, to purchase the necessary machinery, and to have the level driven with all dispatch. The report of this committee has been presented to the board today, and is highly satisfactory. From this it appears that all the plant, consisting of rock drills, &c., air compressor, and turbine, had been delivered and put together at the mine, and the committee only await the delivery of air-pipes and driving wheel of turbine (promised this week) to commence driving. There is an ample supply of water for turbine. The committee are now able to state definitely that the total cost of labour, machinery, and plant to this date to accomplish the object in view is £700. He thought this moderate, and if the works were carried on with similar economy there would be no cause of complaint on the part of the shareholders on this head. In driving the tunnel, it is fully expected to cut several lodes that are visible on the surface before reaching the present workings, and, further, that the water in these latter will be tapped some considerable distance before they were reached, in consequence of the intersecting of the different lodes and their porous character. Should any of these new lodes be productive of mineral in paying quantities it may be made available if it was thought desirable while the driving of the tunnel is continued. He had nothing further to add, but would be glad to give any information that might be desired. Several questions as to the direction and value of the lodes were asked.

The CHAIRMAN said that by the Articles of Association all the directors retire at this meeting, but are eligible for re-election.

Colonel R. MORRISON proposed the re-election of the directors, and Mr. W. B. CAMERON seconded this proposition, the consideration of the remuneration being deferred until next meeting.

#### WEST CREBOR MINE.

The ordinary general meeting of shareholders was held at the offices of the company, Gracechurch Buildings, yesterday, Mr. J. Y. WATSON, F.G.S., in the chair.

Mr. C. B. PARRY (secretary) read the notice convening the meeting. The statement of accounts from August 23, 1880, to January 31, 1881, showed:—Purchase of mine, 5500l.; plant and machinery, 6327l. 19s. 4d.; labour costs, 16127l. 9s.; merchants' bills, 7337l. 18s. 4d.; compensation for damage to land, 1047l. 11s.; and other smaller items, bringing up the total expenditure to 36787l. 7s. 4d. On the other side of the accounts it was shown that the call of 5s. per share, made in August, 1880, realised 30000l.; the balance and liabilities over assets amounting to 6787l. 17s. 4d.

The CHAIRMAN said: Gentlemen,—As this is the first general meeting of shareholders, I would say on behalf of the acting committee, that, in August, 1880, the sett of West Crebor was purchased for 5500l., 500l. in cash, and the rest in shares 5s. paid, and the mine divided into 12,000 shares upon which a call of 5s. per share was made, and all the shares offered *pro rata* to the shareholders in Wheel Corbett, by whom they were taken up, thus raising a working capital of 30000l., less 5500l. The report of the agent will show the quantity of work done in the mine, but I may state here, briefly, as the report of the committee, that a 30-in. cylinder engine, with all necessary pitwork, has been erected, the shaft sunk 365 fathoms, and levels driven east and west at 20, at a total cost of 31227l. 17s. 4d., leaving liabilities over assets to Dec. 24th last, 6787l. 17s. 4d.

The mine is now in a thorough state of working, well supplied with everything, and the agent estimates that with four men in each end at the 30; and to continue to sink the shaft with nine men will cost 1200l. to 1300l. a month, including merchants' bills. It is a question for the consideration of the shareholders and agents, however, whether these ends should be driven or not, and if not, get down the shaft as fast as possible; its present depth, 365 fathoms, not being much more than half the depth of the Crebor adit, at the same time the lode in the mines to the west, was very productive at shallow levels, and the 30 ends may yet produce good ore at West Crebor. Wheel Corbett, in the same lode 200 fathoms west of West Crebor, the ore realised 22,891l., and still further west, opposite Old Gunnislake ore to the value of 10,743l. was raised above the 50. Thus ore may be met with at shallow depths at West Crebor, and thus it might be well to continue the 30 ends east and west. The engine is capable of carrying the mine to a depth of 200 fathoms; and in three months time the shaft will be down to the 45, when good results may be fairly looked for. The Secretary then read the following report from the agent:

Feb. 2.—I beg to hand you my report of the above mine for the meeting appointed to be held to-morrow (Friday). We commenced operations about 16 months ago in shodding to finding the Wheel Corbett lode, and when discovered we commenced to sink the engine-shaft on its course, but owing to the wetness of the winter we did not succeed in sinking many fathoms up to the spring of last year, since which we have erected a 30-inch cylinder double-acting rotary engine, which is of sufficient power to keep the mine drained at a depth of 200 fathoms or more, as the water on the mine is, and most likely will continue to be, very little, and is also of sufficient power to haul the stuff at the same depth, and to which will be attached a drawing machine, which is in course of erection, and will be ready to work in a few days. We have also built a changing-house for the miners, a magazine for explosives, and also lockers for the miners to keep the explosives in. We have also erected carpenters' and smiths' shops, store house and office, and the mine is now laid out at surface with everything necessary for the prosecution of the mine for a considerable time to come. In sinking the engine-shaft the lode near the surface was 4 to 5 ft. wide, composed chiefly of quartz and yellow, but at a depth of about 11 fathoms the lode suddenly improved, and yielded rich stones of yellow and black copper ore, but the ore soon disappeared, the lode became poor, and has continued so to the present depth, now 9 fms. 2 ft. below the 30 fm. level. The lode in the shaft at the present time is 13 in. wide, composed of quartz, capel, mundle, and spots of copper ore. The 30 has been driven east of the shaft 1 fms. 4 ft., the lode for the first 6 fathoms driving was small and poor, but has since been gradually improving in appearance, and is now 2 ft. wide, composed of quartz, capel, mundle, and good stones of copper ore, on the whole a very promising lode. The 30 has been driven west of shaft 8 fms. 2 ft.; when we commenced to drive west the lode was small and poor, but has since opened out to 20 in. wide—a well-defined lode, and yielding good stones of copper ore, but in the present end it is not looking quite so promising, being now about 1 ft. wide, yielding a little ore and mundle, but nothing to value. We have fixed a 9-in. plunger-lift in the 30, and have put down main rods from surface to that level, which is now in regular course of working, but at the present time we only work the engine about 10 minutes in an hour, the water being so little. We shall in a day or two commence to put in skip-road from surface to the 30, so as to get it ready by the time the drawing machine is ready to work. All the timber for which is on the mine, and when the machine is put to work we shall be in a very good position for working the mine both underground and at surface; and as the engine-shaft is now down 6 fms. 2 ft. below the 30 we shall at the present rate of sinking get it deep enough for a 45 fm. level in three months from this time, and in that level we have every reason to expect finding a productive lode, as the ground is very favourable for progress, and congenial for the production of copper ore.—J. ANDREWS.

The CHAIRMAN said the 33 fm. level ends were undoubtedly very promising, but by sinking the shaft to the 45 they would effect a considerable saving in the monthly expenditure, and probably make good discoveries of copper ore at that depth.

Mr. ROSEWATNE thought with the Chairman that it would be better to stop the driving of all the upper levels, and that operations should be confined to the sinking of the shaft.

The CHAIRMAN added that though the ends at 33 were very promising they could not expect to have any lasting deposit at that depth.

Mr. ROSEWATNE believed that the course of ore would be found between the 45 and 55, judging from his knowledge of the district. If they made any valuable discoveries they could, of course, go back and continue the driving of the 33.

The general opinion of the meeting was that the shaft should be sunk as quickly as possible.—The accounts and the agents' report were then unanimously adopted, and ordered to be printed and circulated amongst the shareholders.—The CHAIRMAN, in reply to a question, said that the accounts had been increased at the last moment by their having to pay 149l. for damage to land, the charge being 1000l. an acre. The costs were now about 1447l. a month, but they would be reduced to about 1000l. for the present. He might mention that their agent holds 1000 shares in the mine, which, at all events, showed his confidence in the property.

On the motion of Mr. JOHN RISLEY, seconded by Mr. ROSEWATNE, a call of 1 s. 6d. per share was made.

The appointment of C. B. PARRY as secretary in succession to Mr. W. H. H. Watson was confirmed, and a resolution having been passed indemnifying the trustees in respect to the lease of the West Crebor sett, Messrs. Orlando Webb and B. Spence, the management committee were thanked, and the meeting closed.

A vote of thanks to the Chairman having been passed the meeting closed.

**EAST POOL.**—At the meeting on Monday (Mr. G. A. Michell in the chair) the accounts showed a profit on the twelve weeks' working of 10,344l. 0s. 4d., and a total credit balance of 13,056l. 11s. 2d. A dividend of 96000l. (1l. 10s. per share) was declared, and the balance was carried forward to the reserve fund account—34567l. 11s. 2d. This fund had a two-fold purpose—the first to pay for new erections, and the second as a stable fund to draw from in the event of anything occurring in the mine.—A shareholder here suggested that this would enable them to do away with the bankers' charges, and the pursuer replied that they had this matter under consideration. They would like to save the bank charges if they could. They would see by a reference to the bank book that they had a balance of over 13,000l. to their credit at the bank. A very favourable agent's report having been read, the Chairman said that though it was right to inform the shareholders that the question had been seriously put to the committee, from information gleaned through different parties—for what purpose he did not know—that they were taking the "eyes" out of the mine, and the question was whether they were discovering as much tin as they were taking away. The answer to that question was that they had discovered as much tin in two levels as they had taken away for the past 12 weeks. The Chairman read a letter from Tehidy office, Camborne, pointing out that it had been determined to establish at Camborne, for that town and the surrounding district, a school of science and art. Mr. Basset had offered to give the laboratory a few years ago, but he should object in toto to the principle of the thing. Gentlemen in the districts in which it was proposed to establish these classes might put their hands in their pockets and contribute irrespective of the adventurers in mines. [For remainder of Meetings see this day's Supplement.]

### FOREIGN MINES.

**ST. JOHN DEL REY.**—Telegram from Morro Velho, dated Rio de Janeiro, Jan. 31: Produce, 10 days, second division of Jan., 7250 oitavas, value 28094l. yield 43 oitavas per ton.

**SAN PEDRO COPPER (Chili).**—Dec. 1: San Pedro: The water is now forked to 57 ft., or 9½ fms. below the 150, and the shaft repaired to that level. The new double skip-road is completed, and nothing remains but to get down the remaining 5½ fms. This is filled up with rocks and timber that have fallen from above, and as the work has to be carried on in the water, sinking is very slow and tedious. A breakage in the large cog-wheel of the winding-drum delayed operations for a few days, but all hands turned readily to work on Sunday, and the old wheel was soon replaced by a new one.—San Antonio: We have again resumed the driving by two men. We have at present two promising lodes in the end, which I expect will soon form a junction, from which I look for an improvement in the lodes.

**RICHMOND CONSOLIDATED.**—Telegram from the mine at Eureka, Nevada: Week's run, 337,000, from 910 tons of ore. Refinery, 340,000.

**N. Wescott, Jan. 11:** Since my last letter (Jan. 4) the following developments have been made in the Richmond Mine. The 200 west drift has been run 8 ft. in limestone. The 200 rise near shaft is 10 ft. in low-grade ore. This is a very important discovery, being probably a continuation of the old flat chamber about this level. The 300 north drift has been run 3 ft. in hard limestone—looks favourable. The 400 north from No. 11 chamber has been run 12 ft. in limestone. The 600 north drift from west drift has been run 15 ft. in limestone—looks well for ore. The 600 north-west drift near No. 14 chute has been run 11 ft. in limestone—looks favourable. The 600 rise near No. 14 chute is 6 ft. in low-grade ore. The 700 north drift from winze from No. 13 chute has been run 14 ft. in red limestone. The 700 winze from west drift from north drift from winze from 13 chute has been sunk 6 ft. in limestone—on fissure in red lime. The 800 north drift has been run 3 ft. in hard limestone along fissure. The 900 north drift from west drift has been run 4 ft. in limestone. The 1200 north drift from shaft has been run 19 ft. in limestone, most of which is very dark, resembling shale, but this has been passed through, and the face of the drift is now in a hard light-coloured limestone, looking more favourable for ore than any passed through below the 700 level.

**EUREKA (NEVADA).**—Report on mines for the week ended Jan. 9: Bald Eagle: The north drift from the east cross-cut (150 ft. level) has been advanced 12 ft. during the week, without any change of importance; total, 252 ft. from the east cross-cut. The east cross-cut (No. 2) from the north drift (150 ft. level) has been advanced 11 ft., and an upraise from the end 14 ft., connecting with the bottom of the old stop; this connection was made to-day; work will be commenced on the old workings in a few days, where the prospects are favourable. The 300 ft. level is in favourable ground for drifting; progress this week 21 ft.; total, 163 ft. from the shaft.—Williamsburg: There is no change in the ore stops since last report. Have about 10 tons ore extracted at the mine ready for shipment.

**RUBY AND DUNDERBERG.**—Report on mines for the week dated Jan. 8: Dunderberg: There is no change in the No. 7 ore body since last report. The winze is now down 36 ft., progress this week 6 ft. The west cross-cut, from the 700 ft. level continues in hard rock; progress this week, 8 ft.; total, 58 ft. from the 700 ft. level. The ore in the upraise from the second intermediate drift from No. 2 winze is improving slightly, and it is now about 2 ft. wide, and of good quality. The second intermediate drift has been continued north 25 ft. past the above mentioned upraise during the past week. A small seam of ore was encountered in this drift a few days ago, and at present it is about 4 in. wide, and is in very promising looking ground. The east cross-cut from the 600 ft. level is in much harder ground; progress this week, 7 ft.; total, 29 ft. from the 600 ft. level. The 300 ft. level has been advanced 11 ft. during the week without any change. We have shipped 24 tons of ore this week, and have 22 men at work and seven tributaries.—Bullwhacker: There are two tributaries at work in this mine, and we have shipped 7 tons of ore this week.

**DINGLEY DELL ESTATES AND GOLD MINING.**—Capt. Williams, Jan. 6: We are pushing forward the work with all possible dispatch, and have got the amalgamating tables, excavated ground for a pond to accumulate water during dry weather, and laid the pipes on for feeding the engine, and pulverising launders have now to put down to carry the quartz from the crusher to the mixer before going over the amalgamating tables, and if time will permit I intend to make a self-acting buddle to concentrate the pyrites after leaving the tables, so as to give the machinery a fair and practical test. I can assure you that no time will be lost in getting everything ready. The engineer and smith are pretty forward with their work, and we have now chiefly to depend on the native carpenters for their portion, but I think the whole will be finished in about ten days from this date. The prospecting of the property is proceeding with all possible speed, and the following are the results of the work done during the week: The 100 ft. level, which was in the mine in the surface, is still large, and as well as we are able to judge from appearances on the top it is a strong continuous looking reef, and is likely to produce an immense quantity of quartz; we have hundreds of tons exposed here, but as yet we are unable to judge of the quality; this will soon be ascertained when we commence crushing. Have commenced to sink on No. 4, but the change of ground, as mentioned in my last, has also changed the reef by splitting it into small branches, and shall sink a little deeper to see if they will again unite; if they do not shall try this reef east and west to prove if it goes clear. There is no object in putting on more men here as we can break out the quartz and take it to the mill as fast as we can crush it. The quartz we are breaking is looking well.—Dec. 31: The quartz we are breaking contains a large quantity of pyrites, and from the free gold I can see will give you good returns.—Salomon's Reef: As I mentioned in my report on the 31st ult., I had let the raise up and main tunnel on contract. They are both being driven at 2½ ft. per foot. The main tunnel has been driven during the last week 3 ft., and the raise up 2½ ft. A large reef in both the raise up and main tunnel. The quartz in the end of the main raise up contains more gold, and is better looking quartz than we have had in the last 40 ft. We have had a large quantity of (say) 500 tons at this reef, which has been taken out of the progressive works, which I intend to have carted to the mill at once. The result will give a very good idea what the quartz will average. You must understand at this reef we have not been trying to take off quartz as yet, but rather to push on progressive works—i.e., driving along the course of the main lode, putting in a raise up to old working overhead, 180 ft., &c. From these works we get the direction of lode, width, and the probable quality of richness of quartz, as well opening up the claim properly, so as to enable us to work economically after this.

**DEVALA MOYAR AND RHODES REEF GOLD.**—Report from chief mining manager, Jan. 7: Rhodes Reef mill is very nearly completed. We have a part of the tables to lay yet, and a part of the buddles to put in position, and a few smaller jobs, all of which can be done in a week if we are not delayed for the pulleys we have ordered from Madras.—Rhodes Reef: We have seven men here, and we have no object in putting on more men here as we can break out the quartz and take it to the mill as fast as we can crush it. The quartz we are breaking is looking well.—Dec. 31: The quartz we are breaking contains a large quantity of pyrites, and from the free gold I can see will give you good returns.—Salomon's Reef: As I mentioned in my report on the 31st ult., I had let the raise up and main tunnel on contract. They are both being driven at 2½ ft. per foot. The main tunnel has been driven during the last week 3 ft., and the raise up 2½ ft. A large reef in both the raise up and main tunnel. The quartz in the end of the main raise up contains more gold, and is better looking quartz than we have had in the last 40 ft. We have had a large quantity of (say) 500 tons at this reef, which has been taken out of the progressive works, which I intend to have carted to the mill at once. The result will give a very good idea what the quartz will average. You must understand at this reef we have not been trying to take off quartz as yet, but rather to push on progressive works—i.e., driving along the course of the main lode, putting in a raise up to old working overhead, 180 ft., &c. From these works we get the direction of lode, width, and the probable quality of richness of quartz, as well opening up the claim properly, so as to enable us to work economically after this.

and will be able to do it with half the instruction, and without half the loss of time, &c.

The reef below Rhodes' mill is very much broken up, and we are driving a tunnel along the course of it. In the reef below the hospital we drove six deep through it, at a distance of about 50 yards apart. We got a little gold and considerable arsenical pyrites, but I think these are more likely looking places and outcrops on your estate, so I took the men off for the present. In the reef overlooking Sheardale we are putting two cuts through this immense reef, but we have not yet got through it; it does not look very promising so far. We note your instructions for have plans prepared of the underground workings, &c., on the different reefs on your estate. This will be attended to, and the position of each reef will be marked on a general plan of your estate, so you can see at a glance on what portion of the property each reef is situated. The fullest details will be given. I am pleased to inform you that the further we get into the different reefs on your estate the better the quartz looks. More gold and pyrites to be seen.

**COOTACOVIL GOLD.**—Mr. Harvey writes to the directors of this company as follows:—As previously mentioned, the reef north of the cross-cut has become disordered, forming what is called a "horse;" I am glad to say that it is improving in appearance, becoming more regular, and promises well for the future. South the reef maintains its regular character, thickness, and value. I obtained free gold by washing a small sample. If anything the reef appears to carry a larger percentage of pyrites. Arrangements will be made for opening up the reef at a lower level with as little delay as possible. Surface Work: The water-course is well advanced, and at the site of the reduction works the necessary excavations are being made for foundations of stamp mill and turbine. Machinery: The first instalment, consisting of the turbine work, was being landed, and the stamps followed by another vessel arriving probably this week.—Capt. J. W. Crase reports: No. 1 cross-cut has been driven 10 fathoms, and intersected the big reef, which we have opened southward about 7 fathoms; this for the said distance will average 5 ft. wide, and continues the same in the present end. It consists of quartz, pyrites, oxide of iron in abundance, and every constituent which should make a reef valuable and productive. I have rarely, if ever, seen a more promising lode at such a shallow depth. About 80 fathoms further north we are driving a cross-cut to intersect the said big reef, and from our drilling to-day should cut it in a fathom or two more driving. This would be very important, as it would give us a large quantity of mineral ground for stopping, and also drain the higher workings.

**SOUTH-EAST WYNAD ESTATES AND GOLD MINING.**—Letter from the manager, Mr. J. J. Cooper, dated Pundalur, Jan. 8: Para No. 1: This week's progress, north drift, Test lode 1, 8 ft.; total, 210 ft.; still in old workings. South drift on same lode 11 ft.; total, 49 ft.; the lode is becoming better defined, and the footwall carries a good crop of pyrites. South drift, No. 5, 3 ft.; total, 79 ft. The lode has never looked as well as at present; masses of pyrites, strings of copper, and frequent particles of visible gold. We are cutting a winze plat for the winze to No. 6; the lode taken down in it is of very good quality. Drift from adit No. 2, 10 ft. 6 in. from cross-cut; being driven only by natives, and the quartz being hard, little progress is being made. No. 6 tunnel 20 ft.; total, 176 ft. from mouth. The ground continues favourable for driving, and very good progress is being made considering it has to be closely timbered. Owing to heavy rain some of our surface works have been hindered this week. Our reservoir and drains—but the erection of battery is progressing favourably. I consider the prospects throughout very encouraging; and by telegraph dated Devalah, 30th inst., he says: "Good progress is being made erecting battery."

**TAMBACHERRY ESTATES AND WYNAD GOLD MINING.**—The following summary of reports has been handed to us for publication by this company:—Tambacherry Estates and Wynad Gold Mining Company: Cattle-Pen Reef: The mine captain reports:—We have sunk and stopped on the vein 5 fms. below the surface of the hill, and have uncovered it for about 10 fms. in length. It has a strong and lasting appearance, composed of good-looking quartz and mundle, with oxide of iron. At the deeper end it is 1 ft. wide, and contains all the elements of a productive reef.—Chundale: Mr. Harvey writes: Explorations on this estate have not been entirely successful, but there are indications of a strong reef being opened at a depth of about 50 ft. on what is known as the 74 hill. Until the reef has been cross-cut no opinion can be formed of its direction or value.—Eva: The manager writes:—The adit has not yet reached the reef, but I hope to have it finished by Mr. Harvey's return from Devalah.—Coffee Crop: The crop is turning out better than estimated—192 tons or more.

**COLUMBIAN HYDRAULIC.**—E. S. Jones, Dec. 19: Malpasu New Opening: My last letter will have acquainted you that a machine was almost ready to commence working, unfortunately another unexpected accident prevented its doing so, three large rocks that have been close to the ditch for years to all appearances safe, slid away damaging 80 ft. of flumes, which were at once replaced, another day was also lost since the 19th due to a small break, but to-day I am glad to inform you that the machine is working with a good supply of water, and should the weather not continue so severe as it has been I trust to send you a favourable report of the work. The sand streak has been cut through as far as the present gravel bank, and the water will work down the streak of sand and gravel that rests below it. Any boulder that may appear will be blasted gradually; at present there are only very few in sight, but as they are all to be carried down from 8 to 12 ft. deeper possibly a few more may be met with. It has been impossible to extend the sluices more than 80 ft., already reported. As you are aware, hard gravel had to be excavated, and the sand streak blasted, which at some places is 20 ft. thick, making the cut more than 25 ft. deep; this for the length of 443 ft. is not very easily accomplished. The difference in the depth of the old and new sluices (say Nos. 3 and 1) is 45-15 ft.; this will be the depth gained by the new opening. The distance of No. 3 sluice from the gravel bank is certainly too great, and a portion of the gold may remain in the crevices; at present there are only very few in sight, but as they are all to be carried down from 8 to 12 ft. deeper possibly a few more may be met with. It has been impossible to extend the sluices more than 80 ft., already reported. As you are aware, hard gravel had to be excavated, and the sand streak blasted, which at some places is 20 ft. thick, making the cut more than 25 ft. deep; this for the length of 443 ft. is not very easily accomplished. The difference in the depth of the old and new sluices (say Nos. 3 and 1) is 45-15 ft.; this will be the depth gained by the new opening. The distance of No. 3 sluice from the gravel bank is certainly too great, and a portion of the gold may remain in the crevices; at present there are only very few in sight, but as they are all to be carried down from 8 to 12 ft. deeper possibly a few more may be met with. It has been impossible to extend the sluices more than 80 ft., already reported. As you are aware, hard gravel had to be excavated, and the sand streak blasted, which at some places is 20 ft. thick, making the cut more than 25 ft. deep; this for the length of 443 ft. is not very easily accomplished. The difference in the depth of the old and new sluices (say Nos. 3 and 1) is 45-15 ft.; this will be the depth gained by the new opening. The distance of No. 3 sluice from the gravel bank is certainly too great, and a portion of the gold may remain in the crevices; at present there are only very few in sight, but as they are all to be carried down from 8 to 12 ft. deeper possibly a few more may be met with.

**SARA CREEK GOLD WORKS (Surinam).**—By their advice, dated Jan. 1 the directors have received a further promising gold remittance, in which are nuggets weighing nearly 2 ozs. each. The general character of the gold now being found in the upper workings on the creek appears to point to the neighbourhood of auriferous veins. Two new creeks have also been recently discovered. **ISABELLE (Gold and Silver).**—Mr. Lewis Chalmers writes, Jan. 9: I have now to report for the information of the board that to-morrow morning I will bullion of the assay value of \$850, and that I have on hand cement copper of the value of \$500, as near as I can estimate it. The copper I do not propose to ship until I get a carload of 20,000 lbs., which should net us here over 12 cents per lb. Sent in carloads we save on freight. In confirmation of the above I write you as follows:—Bullion shipped 28850. More next week. Cement copper on hand \$500. I shall melt again on Saturday if all goes well. The particulars you will find in mill report on Wednesday. Mine report by foreman herewith.—Foreman's Report: During the past week we have had a really good day, the ore body; it is getting wider and longer, and continues to look well. During the week we started the pump on the shaft, and have pumped out a considerable quantity of water, but have not yet reached the bottom, which we shall probably do in the course of four or five days. In my next report I shall be able to give you particulars as to how it looks and all about it. We have still the same number of men employed, both inside and outside of the mine. We have shipped large quantities of ore during the past week, and have still plenty on hand.—Mill Report: Since my last report (Jan. 4) there has been no special change in the running of the mill. The quantity of ore run, but really obtained, is the same. Two of the calcining kilns are nearly completed, and if the weather does not continue too cold and stormy in a few days more they can be charged with ore. We have melted bar of bullion No. 2, 1336 ozs. 125 fine silver, assay value 167-41; 50-10th fine silver, assay value \$12-85; bar of bullion No. 3, 945 ozs. 110 fine silver, assay value \$220-78=8400-27. We will report again on Saturday of this week. Cement copper on hand estimated at \$500 net commercial value.

The following telegram was received from the manager at the mines, this morning, Feb. 2, announcing the third shipment of bullion:—"Shipped bullion 3750."

**ROCOPILLA COPPER MINING AND SMELTING.**—S. Tredinnick Dec. 15: Carmelita: No. 14: Hope to finish timbering plant in a few days. No. 13, east end, driving by two men, worth 3 tons of ore per metre, less 15 per cent.; this end is looking well. Winze sinking, by two men, poor; West winze sinking by one man, poor. No. 12 east driving, by two men, worth 1 ton of ore per metre, less 12 per cent. No. 11 east end, idle. Winze sinking, by three men, for shoot pass, poor. West: Since our last report we have sunk a winze in the shoot of the ore end passed through, and have taken out about 3 tons of ore, less 8 per cent. End lode, worth 2 tons of ore per metre, less 18 per cent. We shall drive this end after the winze is communicated. All stopes looking fair, and tribute pitches same as last reported. We have commenced to repair Jose's shaft, and in a few days shall set a contract to fit the skip-road, &c.—Percut Mine: The 120 level driving west of shaft, lode 4 ft. wide, with branches of ore, producing 2 qtls. of ore per metre, at 10 per cent. The 100 east lode, 2 ft. wide, ore all over, producing 10 qtls. per metre. This ends looks favourable. A winze sinking in the bottom of this level east of shaft, lode 2 ft. wide, producing ore, but not to value. Cross-cut driving north, at the 100 level east of shaft: Here we expect to cut through the north lode in a few days, when we calculate to find ore ground. The 80 east lode, 3 ft. wide, with spots of ore. The 60 east lode, 2 ft. wide, poor ground easy. A winze sinking in the bottom of the level, east lode, 2 ft. wide, producing 5 qtls. ore per metre. Stope in back of the level lode producing 10 qtls. of ore per metre, stopping at 4 dollars.—Santa Elena Mine: Driving east on the course of lode, which is 3 ft. wide, good spots of ore. A winze sinking below the level in a lode 3 ft. wide, producing good stones of ore.

**PERRETE.**—Jan. 30: During the past week the operations, both underground and at surface, have been pressing forward with real energy, and a fair amount of duty has been done.—South Mine: The adit level driving in the side of the mountain to intersect the lode, and to unwater and ventilate the mine, is being driven by four men, and they are progressing well with the work. When this intersection is effected there is no doubt a great mine will be opened up here. At present this is the only work being carried on at this mine.—North Mine: As you are aware the important communication between Nos. 1 and 2 levels has been accomplished, which has thoroughly ventilated this part of the mine, and which has enabled us to put a large number of men on productive ore ground. In making this communication by cross-cutting three distinct lodes, running nearly parallel about east and west, and not far apart, have been cut through, and a fourth to the south, which we have in the winze gone down from No. 1 level. The ore-bearing parts of these lodes vary in width from 1 to 4 metres, and altogether form a mass of mineral. That my reports may be comprehended in the future I would distinguish these lodes as Nos. 1, 2, and 3, and so on. We have commenced stopping on the lode near the entrance of No. 2 level, on No. 1 lode, by four men (No. 1 stop). This is the first course of ore cut in this level; the lode is about 3 metres wide, as far as can be seen, and it will yield fully 5 tons of good mineral per cubic fathom. A winze has been commenced in the bottom of this level on the same lode to communicate with No. 3 level; sinking by four men, worth 6 tons of lead ore and blende per cubic fathom. We are also stopping (No. 2 stop) in the back of the same lode further west, by four men, and the lode yields 3½ tons of ore per fathom. On No. 2 lode, in this level, we are driving both east and west, by four men in each end; the east end has been driven 1½ metre, and is worth 2 tons of ore per fathom for width of level. End driving west has been extended 1½ metre, and is also worth 2 tons of ore per fathom. On No. 3 lode we have commenced to drive east and west. The eastern end has been driven by four men 1 metre, and is worth fully 4 tons of rich lead ore per fathom. There is a good lode of ore in the end driving west, but not quite so rich as that going east; driving by four men. This completes the operations in No. 2 level, but very shortly and when required we shall be in a position to largely increase our force of men.—No. 1 Level: We have two stopes







ores.—Wheal Emma, Inclined Shaft: In the 137 east, east of Friend's cross-cut, the lode has been cut into 5 ft., proving of a promising character, being composed of strong capel, quartz, pease, and small quantities of copper and molybdenum. New Shaft, In the 115 east, the lode is 2 ft. wide, composed of capel, quartz, pease, molybdenum, and a small quantity of copper ore.—Railway Shaft: In the 205 west, on south part of lode, the lode is 3 ft. wide, of a promising character, and yielding some good quality copper and molybdenum. In the 190 west, on the south part of the lode, the lode is being continued by the side of the lode for more speedy progress. In the 175 west, on the south part of lode, the lode is 4 ft. wide, of a very promising character, and is worth 1 ton of copper ore and 3 tons of molybdenum per fathom. In Denner's winze, sinking below the 175, on the south part of the lode, the lode is 4 ft. wide, and worth 1 ton of copper ore and 3 tons of molybdenum per fathom. In the 150 west, on the south part of the lode, the lode is from 6 to 7 ft. wide, of a very promising character, and yielding some good quality copper and molybdenum. There is no important alteration at any of the other points of operation throughout the mines.

DEVON GREAT UNITED.—Isaac Richards, Feb. 2: In Willesford's shaft, sinking below the 104 fm. level, the lode is 3 ft. wide, composed of capel, quartz, pease, molybdenum, and a small quantity of copper ore. At the 60 and also at the 50, west of Willesford's on the Capel Road lode, the drivages are being carried by the side of the lode for more speedy progress. The cross-cut south of the 20 fm. level, on Willesford's lode, the ground is without alteration.

DRAKEWALLS UNITED.—Moses Bawden, Feb. 2: Drakewalls United: We have completed the cutting of the pit at the deep adit level, Mathew's shaft, and have commenced driving west on the south branches to communicate with the winze sinking below the 40 between Mathew's and engine shafts. In the 40, west of engine-shaft, the south branches are producing more molybdenum, which we are pleased to see; as, throughout the mine, the stronger the branches the more tin they are found to contain. In the deep adit driving by the aid of rock-drills towards Mathew's shaft the ground is again easier, and good progress is being made. In my next report I shall be able to give you the exact distance we have yet to drive to make the communication. We have about 20 tons of tin ready for sale, and for which we expect to obtain a good price.

EAST BLUE HILLS.—S. Bennetts, Feb. 1: The last piece of lode broken up in the adit east end has shown a capital improvement, and an increase of value from 7 to 20¢ per fathom; it is a fine, strong looking lode, 3 ft wide, and letting out a quantity of water. I consider this improvement a very favourable feature in connection with the future of the mine. The 40 east end has just been holed to the winze from the 30. We commenced drawing the stuff from the Pink lode working to the 30.

EAST LONG RAKE.—H. B. Vercoe, Feb. 2: In the 50 driving west on the lode there is no change; the lode is spotted with lead, but being so near the intersection with the flat, we do not expect much lead until a fathom or two is driven. In the sump sinking through the flat we have very fine looking ground, containing lumps of lead and spots of copper; we shall continue this to prove the deeper beds of the flat, as it is in these we usually find the richest ore. The 50 east looks better than for months past; there is a nice rib of ore 3 in. wide towards the sole of the forebrest, and from which we have got a good pile of leadstiff this week. I look forward to a continued improvement in this end, seeing that we have at last got through the bar of poor ground. The stope in the roof of the 50 west has improved, as expected, the workings having advanced to a point where we had a good lode in the drive. The rise in the roof of the 50 west produces occasional lumps of ore. No change in the shallow flat since last week, work having been interrupted by the severe snow storm of Sunday last. I have sent out notices to the smelters to send their samples to the mine for samples on Monday next for the Holywell ticketing on Thursday.

EAST ROMAN GRAVELS.—Arthur Waters, Feb. 2: The lode in the winze below the 100 fm. level, looking up the 75 south is worth 1 ton of lead, 1 ton of lead ore, and blende, worth about 20¢ per fathom. The 67 south has been driven 6 fms. 4 ft. 9 in. by the aid of the rock-drill this past month; the lode at present is 3 ft. wide, yielding good stones of lead ore. We hope by the end of the present month to effect a communication with the winze from the 86. The 97, north from said winze, is in a lode 3 ft. wide, worth 12 cwt. per fm. The stope in back of the 86 south, on the east portion of the lode, is worth 1½ ton of lead ore per fathom. The stope in back of the 85, south of winze, south of shaft, is worth 1 ton per fm. The stope in back of ditto, north of winze, is worth about 1 ton. The lode in the 105 east is improving in size, and is producing 10 tons of molybdenum and ore per fathom. The lode in the winze sinking below the 105 is yielding 3 tons of molybdenum and ore per fathom. The lode in the 95 east is producing good stones of molybdenum and ore. We sampled yesterday, computed, 102 tons of burnt ore, and the arsenic fumes and chambers are nearly full, and will be discharged in a few days.

EAST VAN.—W. H. Williams, Feb. 2: We are still driving the crosscut in Glangowden brook; yesterday we cut a joint, which appeared to be the footwall, but to-day we find it to be the best part of the lode yet seen, and unless we intersect something better we shall sink upon this. As soon as we reach the footwall I will let you know.

EAST WHEEL ROSE.—Capt. W. Skewis, T. Doldge: North Wheel Rose: The scaffolding is all taken down from the 100-in. engine-house walls, and same painted, the house being now ready for the reception of the engine. The stack has been commenced, and ground levelled and prepared for the engine. Work at all these points is being proceeded with with every possible dispatch. Penrose's: The bob of the 90-in. engine is fixed in its place and bed of cylinder, and the engineer will now connect the cylinder and bottom together, also put in the boilers. The steam capstan is delivered on the mine, and now being fixed. The shears are built ready to lift, but waiting for the pulleys to be delivered from the foundry. The buildings for Green's dressing machinery is being built with all speed.—Innes's Lode: This lode in No. 1 stope is worth for silver-lead ore and blende 30 cwt. per fathom. No. 2 stope is worth for silver-lead ore and blende 10 cwt. per fathom. No. 3 stope is not so good, but is worth to enable us to fix a value on it, but looks as though it will be equal to No. 2 stope, if not better.—Middleton's Lode: This lode continues the same as last reported. Every effort is being made to get all the machinery fixed and ready to work as quickly as possible. We are glad to say we have drawn a splendid pile of ore to the surface from Innes's lode, and is ready for the inspection of any and every shareholder, who, we think, will be more than pleased.

GAULTON COPPER.—G. Rowe, G. Rowe, Jan. 28: The lode in the 117 fms. level east is without change, being over 6 ft. wide, producing 20 tons of molybdenum and ore per fathom. The lode in the 105 east is producing 10 tons of molybdenum and ore per fathom. The lode in the winze sinking below the 105 is yielding 3 tons of molybdenum and ore per fathom. The lode in the 95 east is producing good stones of molybdenum and ore. We sampled yesterday, computed, 102 tons of burnt ore, and the arsenic fumes and chambers are nearly full, and will be discharged in a few days.

GLASDIR COPPER.—Feb. 1: The mine looks as well as usual. Since we began ore-dressing we have broken down about 3000 tons of the cupiferous rock of this mountain, and crushed and dressed about 1500 tons of it. The result has been about 150 tons of copper ore, 1 ton of silver, and 1 ton of molybdenum. Vivians, at Swansea, for sale. Mr. Readwin superintended an experimental trial of 93 consecutive hours: 135 tons of the rock were passed through the crushers and dressed, resulting in 15 tons of good copper ore, at a labour cost of 12¢. 8s., or (say) 1s. 10d. the ton, costing to break down about 2s. 3d. the ton. A 5-ton parcel of the lowest grade rock was amalgamated by Mr. Readwin's method, and yielded over 2 dwts. gold to the ton. Another parcel of 15 tons, mixed with arsenical pyrites, yielded over 5 dwts. of gold to the ton. It is clear that had the 135 tons been all amalgamated by the new method in the same time the working cost would have been about 1s. 3d. to the ton.

GODDARD'S LEAD.—R. H. Vivian, Feb. 2: The shaft is now being sunk again; I shall be able to give you its value in my next, but we shall be obliged to strip down a large piece of the side next week, to make more room for drawing the stuff, after which we shall be in a good position for going down as fast as possible.

GOODEVERE.—R. Knott, Feb. 1: New Lode: Since my last report I am pleased to inform you that this lode has much improved; it has been again divided into two branches, one running principally, I consider, to the shallow and unsettled nature of the lode, and the other to the deeper, and more regular. The discovery was made as it does at present. Being now 2 ft. wide throughout the end producing tin, we are continually meeting with side branches all carrying a little tin, which speaks well of the lode in depth. As soon as the pitwork is on the mine preparations for sinking below the adit will forthwith be made at the same time. The present end should be kept going.—Surface: We stopped the stamps last Saturday, and put the other four heads in their places; the 12 heads are now complete, and working well. I am urging on the dressing floors as fast as possible; after the bushes are complete and the necessary flooring laid, we shall not be long in making ready a small part of the floor for the market, which, according to the sample assayed, is of first-class quality.

GORSEDD AND MERLLYN.—W. Edwards, Feb. 2: I am glad to say that the 90 level is looking much better; the lead in the bottom has risen about 1 ft. into the forebrest. The tribute pitches maintain the value previously reported.

GREAT EAST VOR.—H. Cowling (Feb. 1) reporting on this property, writes: Both lodes are still going down rich; the south lode is 14 in. wide, the north lode 2½ ft., and at their present underlie they will form a junction 4 fms. deeper, that is about 10 fms. from the surface. I have everything to strengthen my belief that we are working on the Great Wheel Vor lode. See note appended to extract from Capt. Cowling's report on New Great Wheel Vor.

GREAT HOLWAY.—W. T. Harris, Feb. 2: Roskell's Shaft: The 110 west has been extended 2 fms. 4 ft. 6 in.; the lode maintains the same bold appearance and width which has characterised it for some time past. In the 60 west we have a junction with a north and south lode, and according to the distance driven the forebrest of this level must be in close proximity thereto, and therefore an important and encouraging change may be anticipated before long; and let to six men, at 10¢ per fathom. The 30 north has been driven 3 fms., the lode yielding lead in paying quantities for that distance; indications are much in favour of a more productive lode standing in the roof of the level, which will be further proved when the level is more advanced. The end presents a very promising appearance, and continues worth 1 ton of lead ore per fathom. One very interesting feature in this driving is the probability of intersecting an east and west lode, where at the junction an immense body of ore may be safely calculated upon. The ground is moderately easy for progress, and set to six men, at 10¢ per fathom. For the present the men are removed to rise against a winze sinking from the level above. This communication will be complete in a few days, hence, and ventilation made perfect; at present it is not so, and great inconvenience experienced in consequence. In the rise some good ore has been discovered, and taking the dip will bring it slightly in advance of the end; the value of this will quickly be realised on resuming the driving. At the 60 east a cross-cut has been driven out north 3 fms. to prove the width and composition of the lode. Several branches containing lead ore and blende have been proved, but before proceeding further in this direction we think it advisable to put out a cross-cut south, which is now being done by six men, at 6¢ per fathom. Prospects are most encouraging, and daily expecting good results, there being a splendid run of lead leading towards this point from the pitch in the back, about 10 yards behind. The winze sinking below this level has been deepened 3 fms., the lode producing lead and blende in paying quantities, and leaving profitable stopping ground to be taken away after the communication above referred to is complete. No. 1 tribute pitch in the back of this level is set to four men, at 4¢ per fathom; and No. 2, per 10¢ of blende. We are now employed putting out a cross-cut to prove the footwall portion of the lode. No. 2 pitch in the back of this level west is set to four men, at 7¢ per ton and 3¢ per ton respectively.

Within the last day or two the lode has considerably improved; worth 1 ton of lead and 1½ ton of blende per fathom. No. 3 pitch in the back of the level east is set to six men, at 11¢. 10s. per ton for lead and 10s. per ton for blende; worth 2½ tons and 1½ ton respectively. The pitch in the back of the level east is set to six men, at 20s. per ton, and 10s. per ton for blende; lode producing 4 tons of the former and 1½ ton of the latter per fathom, and very promising for further improvement.—Brammoch Shaft: No. 4 pitch in the back of the 60 is set to six men, at 7¢. per ton for lead and 2¢. per ton for blende; producing 8 cwt. of the former and 1½ ton of the latter per fathom. No. 5 pitch in the same level is set to four men, at 7¢. per ton for lead and 2¢. per ton for blende; producing a good mixture of both minerals.—Garden Shaft: A pitch in the bottom of the 55 east is set to three men, at 7¢. per ton for lead and 2¢. per ton for blende; lode producing lead and blende in paying quantities.—Office Shaft: A pitch in the bottom of the 60 west is set to four men, at 7¢. per ton and 2¢. per ton; lode producing 10 cwt. of lead and 1½ ton of blende per fathom.—Eyton's Shaft: We are now ready to receive the capstan engine, and other preparatory work in a forward state. Surface work and dressing proceeding with the usual regularity. We have sold another parcel of lead (30 tons), realising 338s. 5s.

GREAT LAXEY.—W. H. Rowe, Jan. 31: The cross-cut in the 247 end, north of Welsh shaft, is driven eastward 2 fathoms, and has intersected some small branches of lode and a strong feeder of water, confirming thus far the opinion that another, and probably main part of the lode, is yet standing in this direction, which a very short distance further cross-cutting will prove. One of the stopes over this level has improved, and now worth 40¢, the other 25¢ per fm. A stope in roof of 235, 12¢. per fathom. No. 1 stope, in sole of 220, 18¢. and No. 2, 15¢. per fathom. A roof stope in same level 25¢. per fathom. In taking down the side at the 210, south of engine-shaft, there is every appearance of a continuance upwards of the same run of ground latterly worked in the 220 roof stope; value at present, 18¢. per fathom. A stope in sole 190, north of Welsh, 30¢. and a rise of an exploratory nature south of engine-shaft, 8¢. per fathom. Just directly over the last mentioned, in sole of 165 south, is a stope worth 20¢. per fathom, and a winze still further south 18¢. per fathom. The stope in sole of 145 south is worked nearly to poor ground, and there is no alteration to notice in the other and shallower workings north and south of the engine-shaft.—Dumbell's: After some necessary timbering, there is nothing now to prevent resuming the sinking of this shaft below the 230 with a full force, Aqueh shaft water having been tapped and drained to the 60. The 230 end north still continues in the unproductive piece of ground mentioned in recent reports. The 215 end has further improved, now worth 55¢. per fathom; but I regret to say the new winze, from being very rich, is now in a strong sparry lode with scarcely any ore in the bottom at present, but this is in keeping with the lode, though so far not very well defined, and containing no ore value at the 122. per fathom; the other remains as recently valued, viz., 55¢. per fathom. The new sole stope in 200 north is improving in going down, and respectively worth 25¢. and 25¢. per fathom. The stope in roof, 30¢. per fathom. A sink and stope in the 185, 22¢. per fathom. A joint rise and stope, 16¢. per fathom. A driving and stope below 179, 12¢. per fathom. A similar working below 125, 30¢. per fathom. A stope in roof, 15¢. per fathom. Three stopes in sole of 110 are worth respectively 20¢., 25¢. and 35¢. per fathom. The cross-cutting in the 85 end north has intersected what will probably prove to be the main branch of the lode, though so far not very well defined, and containing no ore value at the point. The stope below this level is worth 55¢., and the other in roof, 25¢. per fathom. After bolting by cross-cut to the Aqueh shaft in the 60 we have resumed the original north, the branch continuing small and irregular; nor need we expect much improvement till the level is extended some 30 fathoms further north. We are making fair progress with the 70 end south driving towards middle ground, the lode continuing strong and healthy, with a little blende occasionally.

GREAT WEST CHIVERTON.—John Curtis, Feb. 2: The lode in the deep adit is looking much the same as when last reported on. The lode in the 30 end north from engine-shaft is much the same as reported on last week. There is still a nice rib of lead on both sides of the horse, but it is now small, and probably will soon close and improve the lode as we go on, as it has done before. The 44 end has been driven north from shaft 9 to 10 ft., and being now in far enough to be out of danger for the kibble to work overhead we have started to cut a lode, which we hope to complete by the end of next week, where we purpose starting to drive south as well as north. The east and west lode crosses the present lode about 3 fms. south of the shaft, and at this junction there has been good work done with the upper levels. In the 34, south of shaft, the lode continues slightly to improve, and is now yielding saving work for lead.—Aberllyn: In the roof of the No. 2 we have started to rise up against the shaft by the Farm Cottage, and are now up 3 or 4 ft. from the back of the level. The lode here shows some good blende. In the sump bottom of No. 2 there is no change to notice whatever since last reported on.

HINGTON DOWN CONSOLS.—T. Richards, Feb. 1: Fair progress is being made in sinking the engine-shaft below the 12, and the lode continues to produce occasional good stones of copper ore. In the 12, east or the west, the lode continues exceedingly promising, containing capel, quartz, molybdenum, and some saving work for copper ore. In the deep adit level, east of the south cross-cut, the lode is composed of capel, quartz, and molybdenum, with a little black and yellow copper ore. The ground in the south cross-cut continues favourable, and good progress is being made.

KILLIFRETH.—John Mitchell, Joseph Tamblin, Feb. 1: In consequence of the judicious of our balance-bob breaking we have been hindered pretty much from sinking Hawke's shaft, also working our bottom levels; we are now please to say the water is all in fork, and our shaftmen and others are all working in their bargains. The lode in the shaft is still worth 20¢. per fathom. The lode in the 30 end east is worth 30¢. per fathom, and the western end is worth 50¢. per fathom. The stopes in the back of this level, east of shaft, is worth 10¢. per fathom. The stopes east and west of rise in the back of the 20, east of shaft, on south lode, is worth 10¢. per fathom. The lode in the 10, driving east of cross-cut towards the rise, is improved, now worth 7¢. per fathom. The other bargains in this part of the mine are just the same as reported at the meeting.—Ole Sump: The lode in the 40, west of shaft, is producing a little tinstone, but not enough to value. Having holed the rise from the 40 to the 30 we shall at once resume the work of each level, and the production of tin, molybdenum, and tin.

KIRK MICHAEL.—R. Rowe, Jan. 31: The 30 driving north is much as last reported, carrying a rib of ore about 4 in. wide. The south end is poor. The 20 driving north has come up to a small slide, which has disordered the lode and split it into parts; but the whole of the stuff from the end has to be saved for lead. The stope in the roof of the 20 north is worth from 10 to 12 cwt. of lead per fathom.

KILLIFRETH GREAT CONSOLS.—I. Richards, Feb. 2: During the past month the tunnel has been driven 4 fms. 2 ft., the ground having become rather hard, and the lode is a very good one, producing 10 tons of molybdenum and ore per fathom. The lode in the 62, east of the north engine-shaft, the lode is 3 ft. wide, yielding a small quantity tin ore. In the 62, east of the north engine-shaft, the lode is 3 ft. wide, consisting principally of capel and quartz. In the 62, west of the north engine-shaft, the lode is 5 ft. wide, of a very promising character, and yielding some saving work of tin ore. The machinery throughout the mine is in good condition, and working well.

LADY BERTHA UNITED.—Thos. Gregory, Jan. 31: There is no change to report in the 30, east of great cross-course; it continues to look well. In the 40, driving east of cross-course, the lode is 3 ft. wide, and is producing 10 tons of molybdenum and ore per fathom, and will produce from 5 to 10 tons of good molybdenum with copper ore per fathom. We have commenced a new winze below the 30, east of engine-shaft, where we have a large lode, producing fine rocks of molybdenum and some copper ore, and hope to be able to report more fully on this point next week. There is no other change in the mine to report on.

LADY RASHLEIGH CONSOLS.—P. Rich, Feb. 2: Five men have been progressing favourably during the past week in cleaning out the shallow adit (or old men's workings), from which, being very extensive, it is not unreasonable to expect that the lode will be of considerable value. The lode is an arch of ground left in the back in which the lode, though rather small, is very rich for tin. I cannot report yet as to the extent of the workings, as they are full of debris. This we find to be still good paying work. I am surprised at the quantity of tin. The other four men are making good progress in widening the upper level to bring down sufficient water for working the machinery. The other surface work is progressing satisfactorily.

MARK VALLEY.—W. George, Feb. 2: We have nothing new here to notice. All our bargains, as formerly reported, are being prosecuted. A full report shall be given you at my next meeting.

MELANEAR.—John Gilbert, Feb. 1: Our progress is still very good in the 30 cross-cut north driving out of Gundry's shaft, but the ground is a little harder for driving, which is an advantage rather than otherwise, as it will not require timbering as heretofore. The 60 cross-cut, west of Gundry's shaft, is now driven 12 fms. south of the main lode, but we have not discovered anything to notice, and the ground is spare for driving. We are still intersecting small branches of spar and molybdenum in the 70 cross-cut, north of main lode, east of Gundry's shaft, and the ground is looking very congenial for copper ore. The lode in the 10, driving east of cross-course, is 3 ft. wide, and is producing 10 tons of molybdenum and ore per fathom. The lode in the 30, north part of the lode, but is going westward; this appears to be getting nearer the main lode. The 100, driving west of shaft, on the main lode, is 4 ft. wide, and further improved to 3 tons of ore per fathom; but very wet, and rather spare for driving. The lode is 2½ ft. wide, and yielding 1½ ton of ore per fathom, in the 110 driving west of shaft, on the south part of lode, and we are expecting an improvement, as there was ore ground over this place in the level above. The 110, driving east of shaft, on the main lode, is 6 ft. wide, and yielding 2 tons of copper ore per fathom, and some saving work for tin; the ground is very easy for driving. We have cut into the lode about 3 ft. in the 120 cross-cut, north of Gundry's shaft, but have not discovered the north wall; the last 3 ft. has yielded occasional stones of copper ore. The rise in the back of the 110, west of shaft, is 4 ft. wide, and yielding 1½ ton of ore per fathom, and looking promising for an improvement. The lode is 5 ft. wide in the rise in the back of the 110, east of shaft; it is yielding 1 ton of copper ore per fathom, and some saving work for tin. The 110, driving east from the old engine-shaft, is 5 ft. wide, and yielding some good stones of copper and tin ores. In the 110, driving east of shaft, we have not yet seen the lode to the west of the cross-course, but by indications it must be very near.

MONA CONSOLS.—T. Mitchell, Feb. 1: The works here are going on in regular order, and the bottom end is being driven westwards the sink where the former workers got out some good copper ore. There is a little copper in the end at present, and the lode is likely to further improve in going west. The water has increased again after the late heavy rains.

MORFA DU.—T. Mitchell, Jan. 30: Setting Report: The pitch or stope in back of the 60 by eight men to raise bluestone, at 12s. per ton of ore; the lode here continues to look very well. The pitch in back of the 40 by six men, at 12s. per ton; the lode here is split into two parts by a horse of ground consisting of dark chert coming into the middle of the lode, but there is good bluestone on each side of the hard rock. The pitch in back of the 20 by five men, at 11s. per ton; the lode here is looking much as usual, but the men have a little more work to perform in getting away the ore as the workings are extending above the level. The winze to sink in bottom of the 20 at Ida shaft by four men, at 7¢. per fathom. We are still going down by the side of the lode. We expect to finish loading the vessel with bluestone to-morrow.

—T. Mitchell, Feb. 2: The various points of operation here are looking much the same as when last reported. We have just loaded one vessel with bluestone, and half commencing carrying down another cargo.

MOSTYN CONSOLS.—J. Woolcock, Jan. 30: The east level is now well ventilated, and we have commenced to sink a sump in the sole of the level in order to prove the ore, and I am much pleased to inform you that it continues to improve as we proceed. We shall now take the men who were driving the cross-cut for ventilation and put them to stop the roof of the east level, where there

is a good course of ore. By so doing we shall increase our returns. We have now a nice parcel of ore ready dressed in the lead-house. Our prospects were never better than they appear to-day. We have a big lot of snow here, which will stop our dressing of ore for a time; I trust that it will not last long.

Engine and pitwork all in good order, and working satisfactorily.

MOUNT CARRIS, W. Tregay, Geo. Johns, Feb. 2: The engine-shaft is being sunk with all speed. The lode in bottom of the 38 is worth 20¢. per fathom. The lode in the 38 east end is worth 5¢. per fathom. The lode in the 38 west end is worth 12¢. per fathom. The lode in the 27 east produces good stones of tin. The lode in the 27 west end is worth 6¢. per fathom. No other change to report.

MYRDD GORDU.—T. Kemp, Feb. 1: The part of the lode opened on by the 45 fm. level end, west of cross-cut, is of the same composition as reported last week, but exceedingly hard, consequently slow progress is being made, owing to this hardness of the ground I have to-day instructed the men to turn the driving more south, in order to find a more favourable portion of the lode. The lode in the roof of this level is worth 12¢. per fathom; the men for the present are employed in cutting hitches preparatory to putting in stull. The lode in the 45 fm. level end, east of cross-cut, for the part carried (5 ft.) is composed of kilas and ribs of spar, intermixed with molybdenum—a very kindly lode. We commenced drawing the water from the winze sunk below the 34, and I hope to have the same cleared to the bottom by to-morrow evening, when we shall resume the sinking, and expect in a short time to effect a communication in the 46. The stope under the 34, on the north part of the lode, is worth 10¢. per fathom. The stope under the 34, on the main part of the lode, is worth 10¢. per fathom—a fine looking lode. The lode in the pitch over the 12, east of cross-cut, is worth 5¢. 5¢. fm., and I think the men are getting fair wages in their tribute. On or about Saturday next we shall forward Messrs. Goodhead and Co. another 10 tons of silver-lead ore. Hauling and dressing going on regularly, and the machinery in good order.

NEW KIRY.—Wm. Vivian, Feb. 2: The engine-shaft is now down about 10 fms. 3 ft. below the 24 fm. level. I purpose sinking the shaft about 2 fms. deeper, then cut pit at the 36 fm. level and drive north about 3 fms. to cut the lode that was cut in the shaft about a month since. I consider this to be the lode that was cut in the shaft about a month since. There is no change to notice in the other points since last report.

NEW GREAT WHEEL VOR.—H. Cowling (Feb. 1), reporting on this mine says:—Our course of tin is still holding rich. Last Saturday we hauled from 13 or 12 fms. rocks of tin as hard as if it were from a depth of 200 fms. The course of tin seems kindly enough to go all the length of the property. I fully believe the lode will prove equally rich in depth. Capt. Edwin Orchard, one of the owners (Jan. 28) writes to the same effect. The other portions of their communications do not come within the category of mine reports, and can only appear (prepaid) in the advertising columns.

NEW WEST CARADON.—N. Richards, Feb. 1: The ground in the 38 cross-cut, driving south of Hallett's shaft, is eased, consequently better progress is being made. The main lode in the 42, driving west of Hallett's cross-course, is disordered by cross heads, and is at present poor; this lode in this level, driving west of cross-course, has a very promising appearance, and producing stones of tin ore, and from the appearance of the lode in these levels we fully expect to get an improvement shortly. Two stopes in back of this level will yield in the aggregate about 2½ tons of copper ore per fm. There is nothing calling for special remark elsewhere.

NORTHERN LEAD.—Thomas Tonkin, Feb. 2: The tribute stopes above the 42, west section, are being operated on in two places, and the prospects, especially going west near Low shaft, are very good. The two stopes taken together will yield about 25 cwt. to the fathom. The east section stopes are yielding 40 cwt. of ore to the fathom, as the ground is very easy. The tribute stope 15 fm. level west section, maintaining a yield of 10 cwt. of ore to the fathom, and the ground is easily shifted. The east section stopes, 2 two men, together continue to yield 18 cwt. of ore to the fathom. Dressing is going forward as usual, and the machinery is in fair working order.—Bramon Valley: The machinery is in good working order, and the taking up of the belt and the 50 is being performed speedily. Rails are being laid in the 37 fm. level, and driving forward on the lode will be shortly commenced. Our prospects of a good mine here are favourable.

ORTH WALES FREEHOLD COPPER MINES AND SMELTING.—H. J. Vercoe, D. Douglas, Feb. 1: The shaftmen have finished casing and driving the engine-shaft from the surface to the 30, and are now engaged in fixing the driving lift for sinking purposes. This done, sinking will go on without any further hindrance, and as our appliances are now of a much improved description we expect to sink with double the former speed. Nothing shall be left undone to hurry on the sinking to a sufficient depth for another level, as it is in depth we have to look for a permanent paying mine. In the 30 driving north we have strong and promising lode, spotted with copper, but not yet rich enough to enable us to set a value per fathom on it; still, we have every reason for believing that the continuation of the drive will produce further improvement. The dip of the ore ground seen in No. 2 sump. In the 30 driving south of engine-shaft we have a very great improvement; in fact, it is the finest looking lode I have ever seen in the mine. For 4 ft. in width there is a mass of friable spar, with large cavities in which there are splendid specimens of crystallised quartz studded with rich cubes of yellow sulphate of copper. We feel confident of there being a large deposit of ore in connection with this (in all probability underneath), and with this in view we shall use all possible means to get down for a deeper level. We have sent you per rail this evening a specimen of the lode from the 30 south, and I am sure it is equal to anything of the kind you have ever seen. The lode in the No. 2 sump produces fair quality copper, which we are drawing and dressing towards the next sale.

OKEL TOR.—Henry Fulford, J. Rodda, Feb. 2: Good progress is being made in sinking the new shaft in the eastern part of the mine. The end driving towards the new shaft has a satisfactory appearance both for tin and arsenical ores. The stopes in the western part of the mine are looking just the same as for some time past, and are turning out their usual quantities of arsenical ore. Our surface operations are being pushed forward rapidly. In consequence of the leakage of the wellwork of the pumping-engine house further improvement has been somewhat delayed during the week, but we hope to have the engine put right and everything in working order again by Saturday night.

OLD GUNSLAKE.—W. Skewis, R. C. Scobbe, Feb. 1: There is nothing new to notice since last report. We are still pushing on the cross-cut north with all possible speed, and hope soon to have something favourable to report on this direction.

PANDORA.—H. Nottingham, Feb. 1: In the 45, on the new lode, the end driving south is at present in a poor bed of ground, and not producing enough ore to value. The two stopes working on this level are worth together 2 tons of lead and 3 tons of blende per fathom. The stope under the 100, west of shaft, is worth quite 1½ ton of lead and 1 ton of lead per cubic fathom, and appears to be lengthening out north as we get deeper. The two stopes over the 33, south of the shaft, are worth together 1 ton of lead and 1½ ton of blende to a fathom, and the lode about 5 ft. wide.—Surface: We have had very deep snow this week, which blocked up our roads, but we are clear again, and dressing with fair speed.

PASTY-MWYN.—E. Parry, Feb. 2: The 22 is driven west of Modlyn shaft, leaving a few fathoms yet to be driven to reach Gundry's shaft; there is a kindly lode in the end, and the footwall of the lode, which has been very flat for some time past, is becoming more upright as we advance, which is a favourable change for the lode is often poor when the footwall is flat, and the runs of ore found where it is more upright. We shall reach a strong cross-joint with about 5 fms. further driving, when we may look for a favourable change. A tribute pitch in the back of the 13, east of Griffiths', and on the hanging portion of the lode, is worth from 1½ to 2 tons per fathom, and looks like continuing.

PARYS COPPER CORPORATION.—T. Mitchell, Jan. 30: Setting Report: The 30, west of cross-cut on the No. 2, end, by six men, the month, with tribles at 8¢. per fathom; the lode here is still improved by the influence of a series of cross-joints, and only yielding patches of copper ore and sulphur, but we hope to have an improvement here again shortly. The rise in back of the 90, on No. 2 lode, by nine men, at 12¢. per fathom; this place will yield 4 tons of copper ore per fathom, and presents a very promising appearance. The 80, east of cross-course, on the Carreg-y-doll lode, has improved lately, and will yield upwards of 4 tons per fathom; we have let this place on tribute, which has been taken by the men who were driving it at 14s. per ton of dressed ore. We have let the end being in granite. No. 1 stope, in back of this level, by six men, at 10¢. per fathom; the lode is worth about 100 tons for the month. We purpose sampling next week about 300 tons of copper ore.

—T. Mitchell, Feb. 2: We have scarcely any change here since the setting day. The new pitch at the 90, east of cross-course, is looking a little better. Everything going on in the usual regular order.

PENHALLS.—S. Bennetts, R. Harris, Jan. 28: The lode in the 80, west from Blue Hill boundary, is producing some low-quality tinstuff, but not to value. In the 87, west from the engine-shaft, it is worth from 6¢. to 7¢. per fathom. The 70 east is also producing tinstuff, but not of much value. The lode in the 10 north there is no change worthy of notice. The lode in the 45 west is worth 5¢. 6¢. per fathom, and the 42 west on the north lode is worth 12¢. per fathom.

PHENIX AND WEST PHENIX UNITED.—John Truscott, Feb. 2: Setting Report: Old Sump Shaft: The 150 to drive west by two men, at 12¢. per fathom. The 130 to drive west by six men, at 18¢. per fm.; the lode is worth for the part carried (6 ft.) 20¢. per fm. The 120 to drive west by four men, at 7¢. 10s. per fm.; worth 15¢. per fm. No. 1 stope, in back of this level, by six men, at 4¢. per fm.; worth 15¢. per fm. No. 2 stope, in back of this level, by four men, at 4¢. 10s. per fm.; worth 15¢. per fm. The 110 west is suspended temporarily, the men being engaged rising to the level above for ventilation. The 100 to drive west by four men, at 7¢. per fm.; worth 10¢. per fm. No. 1 stope, in back of this level, by nine men, at 4¢. 10s. per fm.; worth 15¢. per fm. No. 2 stope, in back of this level, by nine men, at 3¢. 15s. per fm.; worth 15¢. per fm. No. 3 stope, in back of this level, by six men, at 4¢. 10s. per fm.; worth 12¢. per fm. No. 4 stope, in back of this level, by six men, at 3¢. per fm.; worth 12¢. per fm. The 30 to drive west, on the north part of the lode, by four men, at 3¢. per fathom; the lode being in granite. No. 1 stope, in back of this level, by six men, at 4¢. per fm.; worth 15¢. per fm. No. 2 stope, in back of this level, by six men, at 3¢. per fm.; worth 20¢. per fm. No. 3 stope, in back of this level, by six men, at 3¢. 15s. per fm.; worth 15¢. per fm. The 40 to drive west by four men, at 3¢. 15s. per fm.; worth 15¢. per fm. No. 1 stope, in back of this level, by four men, at 3¢. 10s. per fm.; worth 12¢. per fm. No. 2 stope, in back of



**TANKERVILLE GREAT CONSOLS.**—Arthur Waters and Son, Feb. 2. Tankerville Mine: The 220 fm. level has been driven 19 fms. 2 ft. west of Watson's shaft, on No. 1 north lode. We have suspended the driving here, and the men are cutting flat, &c., preparatory to sinking the shaft to another level. The 220 cast of this lode has improved this week; lode to day 3 to 4 ft. wide with quite 1 ton of lead ore per fathom. This end is now about 17 fms. from the shaft. The two stops in back of this level, one east the other west of shaft are together worth 2½ tons of lead ore per fathom. There is no change in any other point in the mine to notice for some time past.—Pennerley: The lode in the 120 level, on the Warm Water, is worth 12 cts. per fathom. The lode in the 10 level is worth ¾ ton per fathom, and improving. The winze below this level on same lode is worth 30 cts. per fathom. The stop in back of this level is worth 1 ton per fathom. The 60 cast, on Big Ore is worth 15 to 20 cts. per fathom. The two stops in level, one east the other cast of the crosscut, are together worth 2 tons per fathom. The 100 level is worth 12 cts. per fathom. The winze in this level is worth 25 cts. of lead ore per fathom.—Potter's Pit: The new engine is now in its place and ready to work. The new head gear and pulley-stands are being erected, and we hope to have everything ready for winding with the engine next week.—Bog Mine: The water has now been drained 2½ feet below the back of the 130 fm. level. We have today sent out samples of 25 tons of lead ore from Pennerley, and 10 tons

**WHEAL GEORE.**—Chas. Kneebone, Feb. 2: The foundations and bedding are now ready to receive the engine and mills. The reservoir is up—one can see the required height for fixing the overflow, and all other surface work progresses regularly. I have to-day received plans for drying-kilns and disintegrators which will occupy us till the 20th or 24th to get in place, and as it is desirable that this should be ready at the time of the mill's starting, I think it will be best for the directors to fix Saturday, the 25th inst., for putting the whole in motion. In the adit south-east towards the open cutting we are passing through a bar of ground rather slower of progress than we have met before, but I expect this is only temporary, as we find it of an open character on the other side.

**HEAL JANE.**—J. Reed, Feb. 1: In the 60 cross-cut, driving north, on the north part of a group of veins, we have seen such promising appearance as to cause us to expect a good result. The ground is composed of capel, sand, mud, and stones, and is very hard. The vein to the north at the deep adit towards the north part of the great lode there is no change to notice; we are expecting shortly to cut the north part of the lode which has proved so productive in the levels above. In the 16 cross-cut, driving south from Gilbert's to cut the Ready Money lode, the ground is more favourable for driving, and good progress being made. In the stopes and pitches throughout the mine there is no change to notice since my last report.

**CORPORATION OF SOUTH AUSTRALIAN COPPER.**—The South Australian Register of Dec. 23 says:—"The Corporation have determined to work the Leigh's Creek, the Yudanmutana, the Mount Rose, and the Nilditty Mines. The latter mine, it is stated, is rich in silver-lead, having given an assay of 70 per cent. lead, 114 ozs. of silver, and 10 dwts. of gold per ton. The company have already commenced actual operations (under the superintendence of Capt. Paul) at the Bilman, and the following mines in the neighbourhood:—The Wheal Fawcett, the Ashcroft, and the Gormett's Mine. Extensive machinery is also being erected at the Bilman Mine, and there is every probability that this property becoming ere long a scene of business activity upon a large scale."

Mr. Frederick George Painter has been appointed official liquidator of the Coombe Slate Quarries (Limited).



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 ASHES, TERNE ASHES, AND ALL REFUSE CON-  
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 METAL MERCHANTS AND BROKERS.  
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 6, GREAT CHARLES STREET, BIRMINGHAM.  
 OLD METALS of EVERY DESCRIPTION PURCHASED for CASH.

## The Mining Market: Prices of Metals, Ores, &amp;c

METAL MARKET—LONDON, FEB. 3, 1882.

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contracted for by the directors. The 62 west is producing good tin ore.

Drakewalls, 15s. to 17s. 6d.; about 20 tons of black tin will be sold next week. The report on the mine will be found in another column.

South Devon United Mines, 1/2 to 1 1/2; the report of the manager this week states that the mine has greatly improved, and some further important discoveries of ore may at any moment be made according to present indications.

Wheat Sisters, 1 1/2 to 2; at the next meeting of shareholders it is expected that a call of 5s. per share will be required to provide for the loss on the four months' working.

Devon Great United, 1/2 to 1; some good copper ores and mounds are now being obtained from the bottom levels. Rock-boring machinery will shortly be at work at these mines.

Kapanga, 11s. 3d. to 13s. 9d.; during the week a telegram has been received at the company's office bringing the satisfactory intelligence that gold had been cut in Scotty's lode at the 50, and in Kapanga lode at the 70 ft. levels.

Richmond, 12 1/2 to 12 3/4; the directors declared the usual quarterly dividend (the 31st) of 10s. per share, free of income tax, on Monday; the warrants will be posted on Tuesday. The usual telegram from the mines at Eureka, Nevada, states that the week's run was \$37,000 from 910 tons of ore. During the week the refinery produced doré bars to the value of \$40,000. The assistant superintendent (Jan. 11) reports that the 200 rise near shaft has been run 10 ft. in low-grade ore. This is a very important discovery, being probably a continuation of the old flat chamber above this level.

The 300 north drift has been run 3 ft. in hard limestone; looks favourable. The 600 north-west drift has been run 15 ft. in limestone; looks well for ore. The 600 north-west drift, near No. 14 chute, has been run 11 ft. in limestone; looks favourable. The 600 rise, near No. 14 chute, is 6 ft. in low-grade ore. The 700 north drift from winze, from No. 13 chute, has been run 14 ft. in red limestone. The 700 winze from west drift, from north drift from winze from 13 chute, has been sunk 6 ft. in limestone, on fissure in red lime. The 1200 north drift from shaft has been run 13 ft. in limestone, most of which is very dark, resembling shale; but this has been passed through, and the face of the drift is now in a hard light-coloured limestone, looking more favourable for ore than any passed through below the 700 level.

Ruby and Dundenberg, 1 1/2 to 2; the weekly mine report advises that the No. 7 ore body in the winze below the 700 ft. is now down 36 ft., and the ore continues to improve. The ore in the up-rise in the 2nd intermediate drift, between the 600 and 700, is improving, and is now about 2 ft. wide of good quality. The other points of the mine show good progress.

Bureka (Nevada) Silver, 1/2 to 1; there appears to be no change in the north drift (Bald Eagle) this week. Drift No. 2 on this level has been connected with the old stopes, and the prospects are described as favourable. No change in the 300 ft. level. There have been 10 tons of ore extracted from the Williamsburg during the week.

Michipicoten, 1 1/2 to 1 3/4; the mining superintendent, Mr. E. D. Ingall, in a telegram received this week, says—"Percentage of metal in native copper vein increasing. Rock appearing full (of copper) to the eye; shot, leaf, and small masses. Should this discovery prove as valuable as it appears to be, the yield per fathom ought to be enormous, probably as much as 5000." The Algoma Pioneer, of Jan. 6, says—"The upper end of Lake Superior was open on Dec. 16, and the tug Siskiwit was running between Duluth and Prince Arthur's Landing. The trip of the Mocking Bird from the Sault Canal to Michipicoten Island on the same date shows the latest navigation of the great lake on record."

Missouri, 10 to 10 1/2; advice received this week state that at old engine-shaft the rise from the 270 north to the 165 north has been completed. Two old levels have been discovered at 200 and 230 ft. respectively; the 165 level has now been explored to end—100 ft. from shaft. This ground will now be tested to ascertain if good stopping ground cannot be reached. Work in the other levels has been carried on. No particular change in ground to report.

Hornachos, 5 to 6, with several sellers and with little business reported. A shareholder states that the sooner the suggestion of several shareholders at the last general meeting is carried out the better for the company. A true statement of the assets and liabilities up to the present time ought to be furnished to the shareholders forthwith, and by the employment of a public accountant to verify such statement, might be the means, in some measure, of regaining confidence.

Lead Mine shares have been more in demand, but prices remain about the same; there is certainly no material improvement. Goginan, 1 1/2 to 1 3/4; it is stated that the new discoveries at this mine continue to improve, and we are informed that the property has this week been inspected by an eminent mining engineer, who has expressed a favourable opinion upon its prospects and paying capabilities.

Van, 7 to 8; the usual monthly report is encouraging. The sale on Thursday, 200 tons lead and 150 tons blende, realised 2588s.

Minera, 8 1/2 to 9 1/4; a shareholder writes that he is not satisfied with the present committees and local management, and thinks that some further change should be made. He also notices that with the large sales of blende and lead ores there should be another large dividend of 1s. 6d. per share shortly declared, as the last he received of this amount was some three months ago, and he is looking with some hope that the next may be 1s. 8d. or 1s. 9d. per share, or at the satisfactory rate of 3 1/2 per cent. per annum on the present quotation of shares."

Roman Gravel, 10 1/2 to 11; the mines continue to look well, the 65 end south being worth about 110s. to 120s. per fathom, and the other ends further improved, as will be seen by the manager's report.

Leadhills, 2 1/2 to 2 3/4; it appears that by the vigorous development of Brown's lode a rich mine is being opened out, as was set forth in the last manager's monthly report.

Tankerville, 7s. 6d. to 8s. 6d.; Potter's pit (part of the property) is looking promising, and a new winding-engine has been delivered this week at the mine, and which will forthwith go to work, and will be the means of quickly enabling the company to increase the sales of lead ore.

The secretary of the Quartz Hill Consolidated Gold Mining Company, Mr. Edward Jenkins (Feb. 3), writes—"I beg to inform you that the petition presented against this company has been unconditionally withdrawn. Will you kindly mention this in your Money Article."

The letters of allotment in the Tacquah Gold Mines Company (Limited) have been posted.

The South-East Wynaad Estates and Gold Mining Company (Limited) notify the receipt of a telegram from Mr. J. J. Cooper, dated Devallah, Feb. 2—Expect to commence crushing (12 heads) first week in March.

The Frontino and Bolivia statement of profit and loss for the month ended November show that 1951 tons of ore produced 2164 ozs. (average 1 oz. 2 dwts. per ton), and the gold bought 191 ozs. = 2355 sds. The value of the gold, including profit on exchange, was 5922s.; the cost of the mines, in London and at Medellin, was 4484s.; and there was paid for gold bought of tributaries, 379s. = 4632s., leaving profit, 1129s. In addition to the above cost of 4484s., the sum of 1541s. has been spent on capital account.

The Antioquia (Frontino) Company's statement of profit and loss for November shows that the manager reports a produce of 28 ozs. of gold of the estimated value, including profit on exchange, of 90s. 16s.; and the cost of the mines, at Medellin and in London, 442s., leaving a loss of 351s. 4s. In addition to the cost of 442s., the sum of 82s. has been spent on capital account.

At Redruth Ticketing, on Thursday, 916 tons of ore, of 7 average produce, and containing 64 tons 4 dwts. of fine copper, were sold for 3641l. 18s. 0d., being 3l. 19s. 6d. per ton of ore; 11s. 2d. per unit, or 56l. 14s. 6d. per ton of fine copper in the ore, and an average standard of 95l. 19s. Subjoined are the particulars of the two last sales:—

Date.	Tons.	Standard.	Produce.	Per ton.	Per unit.	Ore copper.
Jan. 19, 2226	2102	6	0	5 1/2	43 13	6
Feb. 2, 916	95	19	0	7	3 19	6

11 2

Compared with the last sale, the decline has been in the standard 2%, and in the price per ton of ore about 2s. 9d.

Petitions for winding-up the following companies have been presented to the High Court of Justice:—German Date Coffee, Barry's Condensed Soups and Food Company (Limited), Pure Beverage Company (Limited).

Creditors of the Carbonite Company (Limited) are required to send particulars of their debts or claims to Mr. James Ford, of Chapside, or to Mr. James Hutton, of West George-street, Glasgow, before March 17.

Sir Richard Gethin desires to state that he has retired from the directorate of the Quartz Hill Consolidated Gold Mining Company since Jan. 15. He understands that the company is at present in process of reorganisation, many important changes in the management having been made since the date mentioned. The value of the

mine is not questioned, and he believes that under proper management the anticipations originally held out will be fully realised.

Red Rock has sampled 25 tons of lead for sale next week. Frongoch has sold 100 tons blende at 2l. 19s. and 50 tons at 2l. 11s. per ton.

Mr. Edward Ashmead, of Draper's Gardens, accountant, and auditor to many mining companies, has been admitted as a Fellow of the Institute of Chartered Accountants in England and Wales.

**BRAZILIAN GOLD.**—The latest advices state that at Matta Matta, one of the quartz mines, the north drift has intersected a strong lode of quartz and pyrites, a favourable indication for gold. The encouraging feature of this discovery is that the lode is no less than 2 ft. wide, is more regular than any hitherto seen in this mine, and produces gold. This lode will afford a supply of ore for the stamps.

Southward several drifts are going out on veins all showing gold; all these lodes are yielding ore for the stamps. The manager states that he has now obtained a masterly position over this section of the company's property. In the Jacotinga, from which so much is expected, a promising vein is being opened out, 2 ft. wide, and is expected to intersect the vein previously reported as producing gold. The whole tenor of the advices is encouraging, indicating the early realisation of profitable results.

**DEVON FRIENDSHIP.**—The 30 west continues to be worth 5 tons of arsenical mounds and 1 1/2 ton of rich copper ore per fathom; the ground being easy good progress is being made in driving. The 12 west is worth 3 tons of arsenical mounds per fathom. As soon as this level is communicated with the 30 by a rise from the latter level, and the winze below the adit also completed to the 30, they will be in a position to work on the large piece of ore ground in this part of the mine, and considerably increase the returns. They expect to drain to the 50 under adit in six or eight weeks, and by that time the boring machinery will probably be at work.

**NEW TRUMPET CONSOLS.**—This mine is now registered under the Limited Liability Acts in 12,000 shares of 1l. each, and an opportunity is thus given to investors to secure shares in one of the most promising tin mines of Cornwall. The mine will be worked by water power; is already producing splendid tin. Nearly all the shares are subscribed for. Mr. E. J. Bartlett, of Great St. Helen's, is the London agent and director, and every information will be gained from his offices. We should advise our readers to read the prospectus, which so clearly sets forth the position of the mine. The purchase of the mine has been carried out on very fair terms, no cash being paid by the Limited company.

**SINCLAIR LEAD AND BLENDE MINES.**—The new shaft is going down well and great expectations are entertained of cutting the main lode rich. The famous Milw vein passes through the sett, and this yielded in the mine bearing its name thousands of pounds of lead. The capital has been privately subscribed and shares are in fair demand.

**GREAT HOLWAY.**—This property continues to open up well. The 80 yards level—a pioneer point—has entered a splendid course of lead and will, no doubt, be as productive as the 60. Returns of lead and blende will now rapidly increase, and should the expected rise in lead take place the mine will be of very great value. The management may be congratulated at the results of 1881. Not only is the machinery in every respect working well, but the company have completed dressing floors capable not only of treating a large monthly produce, but in addition erecting many labour-saving appliances by means of which the dressing cost is reduced to 10s. per ton. These floors are well worth a visit and an underground inspection of the mine will reward the effort.

**EAST WHEAL ROSE.**—A sample of silver-lead ore from Innes lode has been received at the offices of the company for the inspection of the shareholders. The lode, which is above the adit level, is some 600 fms. in length, and in new or unworked ground.

**TRESAVEAN.**—Eight samples of tin stuff have been taken from Caddy's lode from the different levels down to deep adit. The average is 50 lbs. weight of tin per ton. The lode is reported to be from 6 to 12 ft. wide.

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50 Bodirris. 25 Hington Down. 40 South Devon.  
50 Carnarvon. 50 Indian Phoenix. 50 South Penarth.  
2 Carn Brea. 20 Kib Hill. 20 South Tolcarne.  
100 Devon Friendship. 100 Kapanga. 100 Tollma.  
10 Devon Great Consols. 20 Lead Hills. 10 West Kitty.  
100 Don Pedro. 50 Langford. 100 West Polbrean.  
20 East Chiverton. 20 New West Caradon. 75 West Godolphin.  
80 East Blue Hill. 30 New Kitty. 40 West Godolphin.  
65 East Caradon. 20 Okel Tor. 20 West Crebor.  
60 Gawton. 50 Penhall. 20 West Phoenix.  
70 Glenroy. 100 Prince of Wales. 25 West Jewell.  
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50 Bratsberg, 32s. 20 Wynaad Perseverance 50 Mysore Reef, 5s. 9d.  
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**LEAD ORES.**

Date.	Mines.	Tons.	Price per ton.	Purchasers.
Jan. 28—Fosdalen	100	£12 2 0	Quirk, Barton, and Co.	
—Pierrefitte	50	8 0	ditto	
—Grogwinlon	50	9 11 0	Neville, Druce, and Co.	
Feb. 2—Court Grange	20	13 2 0	ditto	

RED ROCK has sampled 25 tons of lead, for sale next week.

**BLENDE.**

Date.	Mines.	Tons.	Price per ton.	Purchasers.
Jan. 31—Frongoch	100	£2 19 0	Vivian and Sons.	
—ditto	50	2 11 0	ditto	
—Cwmystwyth	60	3 18 0	Pascoe, Grenfell, & Co.	
Feb. 2—Asheton United	60	2 11 6	Vivian and Sons.	



### Notices to Correspondents.

Much inconvenience having arisen in consequence of several of the Numbers during the past year being out of print, we recommend that the Journal should be filed on receipt; it then forms an accumulating useful work of reference.

**FOULING RIVERS WITH MINE WATER.**—Will any reader of the Journal give information as to the most effective way to filter dirty water from copper and lead washings, that the water may be partly clear before entering main streams or rivers? And say if the process of filtering is expensive or not?—*INQUIRER.*

**MINERS' REPRESENTATIVES—ADDRESSES.**—"Enquirer" (City).—Mr. Crawford's address is Durham. The Yorkshire Miners' Association, Barnsley; Mr. Frith secretary. There is another Association, South Yorkshire and Derbyshire; Mr. Clappell, secretary, Rotherham.

**TAKING MINES.**—Will some correspondent inform me through the Mining Journal whether the Local Assessment Committee can tax our mine without profits, and if so, what do they found their tax upon? If on dues they have taxed us on 150*l.*, while we have only paid a little over 70*l.*—*D. and C.*

**Received.**—"J. A. H."—"J. B."—"Shareholder" (East Wheel Rose)—"N. R." (Hibernian Bank)—"One Interested" (Tambacherry Estates and Wynad Gold)—"Engineer" (Pittsburg): We will endeavour to do so in a week or two—"Shareholder" (Wheat Coates): See a letter in another column—"Old Reader" (Dublin)—"R. C." (Gold Coast)—"Shareholder" (Phoenix and West Phoenix)—"Tributer"—"W. G. H." (Stourbridge).

## THE MINING JOURNAL,

Railway and Commercial Gazette.

LONDON, FEBRUARY 4, 1882.

### IMPROVED METHODS OF MEASURING THE VENTILATION IN MINES.

Not much change has taken place for some years past in the system adopted for measuring the ventilation in mines, but of late some new means have been brought under notice for ensuring the greatest amount of accuracy in a short time, and making it self-registering. And for this purpose the telephone has been brought into successful operation, although as yet it has been introduced at only a few places. BIRAM's anemometer has been the instrument generally adopted, but in the 6-in. anemometer it requires a current of 100 lineal feet to set them in motion, so that in some badly ventilated mines they are not of much utility. By the anemometer each revolution of the vane corresponds to 1 ft. in the linear motion of the air, and is registered on the dial plate, and the velocity per minute multiplied by the area of the place in square feet gives the number of cubic feet of air travelling per minute. A still simpler, but less accurate, mode sometimes adopted is to walk from a given point in the direction of the current of air at such a speed as just to keep upright the flame of a candle carried in the hand, and the length travelled in a minute multiplied by the area of the airway is the quantity of air passing per minute. There are certain other ways for ascertaining the current of air passing through a mine, but they all necessitate the descending of the mine for the purpose of measuring the ventilation. Mr. HALL, one of Her Majesty's Inspectors of Mines, recently brought under notice a new fan indicator and tell-tale for indicating the speed at which fans went, and which could be shown in the office above ground at all times. But the same gentleman some time since brought under notice a most effectual mode of registering the ventilation of a mine by means of a telephone, so that by it persons in charge of mines would at any time be able to see the quantity of air passing into and returning from the different districts. Where the ventilation is obtained by means of a furnace there would be a constant check on the man in charge of it. And this is a most important matter, for the ventilation in a mine has been known to fall off from one-seventh to one-fourth in amount in consequence of the negligence of the furnace-man, and this, too, where the full ventilation was barely sufficient to keep the gas down from the explosive point. In one instance where an explosion took place, killing more than 100 persons, the fireman a short time before it took place on going to the furnace found it very slack indeed. This shows how necessary it is that the state of the air in a mine should be accurately ascertained at all times, and without descending into the workings or roads. But the telephonic indicator could be applied to each of the air-roads by means of wires brought to a point on the surface. For the purpose of indicating the ventilation at the surface an anemometer—say a BIRAM—is fixed permanently and firmly to an inch-round iron bar stretched across the air-way, the attachment being made with a small collar and screw, so that the instrument may vibrate as little as possible when the current plays upon it. A permanent bar magnet is attached to the anemometer, and on one pole of the magnet a small bobbin of insulated wire is fixed, one end of the wire being connected to a line wire and the other to either, in the same manner as telephones are usually connected. The pole on which the bobbin of wire is placed is made to project a short distance through the bobbin, and so arranged in front of the anemometer that at one-tenth revolution of the vane a small steel spring is caused to vibrate in close proximity to the pole on which the bobbin of wire is placed.

The result is that at each vibration of the spring a current of electricity is induced in the coil of the insulated wire from the fact of the vibration of the spring having disturbed the magnetism of the permanent magnet in which the coil is wound. The wire line from the anemometer after being led up to the office on the surface is connected to one of BELL's telephones, when the action which takes place is exactly the reverse of that which occurred with the anemometer, as the currents generated by the vibrations of the spring in passing round the coil of wire in the telephone office affect the magnetism of the permanent magnet round which it is wound, either increasing or decreasing its magnetism in accordance with the direction of these currents, thus attracting the diaphragm of the telephone, or allowing it to recede further, and so setting up a series of vibrations in the air in its vicinity similar to the vibrations of the small spring of the anemometer, so that the particular note the spring makes is heard in the office. It is further stated that the reason of every tenth revolution being chosen is that it would be impossible to count every revolution of the anemometer when running at a high speed, and for all practical purposes every tenth revolution is found in every way sufficient. The wires reaching from the anemometer to the bottom of the shaft are protected by  $\frac{3}{4}$ -in. iron pipes, and those in the shaft itself are carried on insulators fixed in the walling, and on the surface they are carried on posts from 12 to 20 ft. high or underground, as may be desired. With respect to the barometers that have been found most effective, the Biram and Robinson have been found the most suitable, the Robinson for currents exceeding 600 ft. per minute, and the Biram for currents of less velocity. With respect to the two anemometers named from a paper read and prepared by two eminent mining engineers, there is valuable information given. The Robinson, we are told, is constructed on the assumption that the force of the impact of the air against hollow hemispherical cups is twice as great on the concave as on the convex side of the cup, and that the vane revolves at the rate of one-third of the velocity of the current, except as in so far as the velocity of the revolution is modified by friction. The mechanism of the instrument is very strong, and allows of the revolutions being recorded throughout a whole day; it would, therefore, be a very suitable anemometer to have near a furnace or in the principal intakes or return from a mine.

From some experiments made for the purpose of observing whether the action of BIRAM's anemometer varied much with the condition of the instrument, and as to its action after being much used and in a dirty condition, and it was satisfactory to find that the action of the instrument was very little altered through those varied conditions of the practical utility and value of the apparatus described for registering the ventilation in the mines or in the airroads. We do think there will not be two opinions on the part of practical men, especially those connected with coal mines where ventilation is of such importance from a safety point of view, if from no other, and where any deficiency might result in serious consequences. But

it is not only as regards the roads and ordinary courses that the system we have noticed may be brought into operation, but we are told that it is quite practicable to take a wire into the face of the workings themselves in the case of any special danger being apprehended. In each of these instruments, to gauge the actual velocity of an air-current, certain additions require to be made for the friction of the bearings, and each separate instrument must be tested and regulated. The proposed system, according to Mr. BELL, affords an opportunity to those having the charge of mines for having a reliable and economical means of obtaining constant information of the quantities of air passing into and returning from the different districts of the mines, and where furnaces are used for ventilating purposes there would be known at all times whether they were efficiently attended to or otherwise, so that increased safety would be ensured to the workmen. It would also be a great encouragement to managers to make greater efforts to obtain good ventilation. This interesting application of the telephone to the most important of mining operations should commend itself to managers, for it would greatly lessen their responsibilities as well as save a great deal of labour, whilst they would not have to depend upon the reports of subordinates—not at all times even nearly accurate—as they have had to do as regards the ventilation, and in which so often depends not only the safety of the mine but of the workman as well.

### AMERICAN BLAST FURNACES.

The statistics available as to the condition of the blast furnaces of the United States at the commencement of the current year are of a fairly satisfactory character, although it must be admitted that the activity indicated is scarcely so great as we could, perhaps, have anticipated. Thus the number of furnaces in operation Jan. 1, 1882, did not exceed 466, as compared with 475 in operation at the commencement of 1881; 384 in operation at the commencement of 1880; and 257 in operation at the commencement of 1879. On the other hand, the number of furnaces out of blast had increased at the commencement of 1882 to 262, as compared with 256 at the commencement of 1881; 253 at the commencement of 1880; 433 at the commencement of 1879; and 449 at the commencement of 1878. While, then, the condition of affairs is satisfactory, the little ground gained 12 months since appears to have been lost in 1882. Of the charcoal worked blast furnaces of the United States 59 per cent. were in operation at the commencement of this year. The corresponding proportion of furnaces worked with anthracite in operation at the commencement of 1882 was 71 per cent., and the corresponding proportion of furnaces worked with bituminous coal 65 per cent. It follows that the greatest proportion of idle American blast furnaces was to be found in those worked with charcoal, while the largest proportion of those in activity was to be found in those worked with anthracite coal. When we are dealing with the number of furnaces in blast in the United States we ought, perhaps, to take some account of the fact that the productive capacity of the most recently constructed furnaces is relatively larger. We ought also perhaps to observe that the number of furnaces in operation Jan. 1, 1882, was larger than the corresponding number in operation Oct. 1, 1881. Without, however, pursuing these minute comparative particulars any further, we may sum up matters by observing that at the commencement of 1882 there was a substantial activity observable in the production of American pig iron.

We need scarcely repeat the well known fact that the lion's share of the production of pig iron in the United States is effected in Pennsylvania. Thus at the commencement of this year Pennsylvania had 28 charcoal worked furnaces in blast, their productive capacity being 1458 tons per week. The number of furnaces worked with anthracite in blast in Pennsylvania Jan. 1 this year was 123, their productive capacity being 27,473 tons per week. The number of furnaces worked with bituminous coal or coke in operation in Pennsylvania Jan. 1 this year was 50, their productive capacity being 20,300 tons per week. It follows accordingly that Pennsylvania had altogether 201 furnaces in blast Jan. 1, 1882, their aggregate productive capacity being 49,231 tons per week. The other American States all put together thus contributed between them no more than 265 blast furnaces to the aggregate of 466 reported in operation Jan. 1. Ohio ranks second in importance to Pennsylvania as a great centre of metallurgical industry. The number of charcoal worked furnaces in blast in Ohio Jan. 1, 1882, was 25, their aggregate productive capacity being 2334 tons per week. Ohio had also 54 furnaces worked with bituminous coal or coke in blast Jan. 1, their aggregate productive capacity being 12,327 tons per week. As Ohio contributed a contingent of 79 furnaces to the general total there remains only 186 furnaces to account for. Of these 39 were in operation Jan. 1 in the State of New York, their aggregate production being 7753 tons per week. There still remains 147 furnaces to be accounted for, and as regards these New England figured for 14, New Jersey for 12, Maryland for 13, Virginia for 21, Georgia for 4, Alabama for 14, West Virginia for 4, Kentucky for 4, Tennessee for 12, Indiana for 1, Illinois for 10, Michigan for 17, Wisconsin for 10, Missouri for 7, and Colorado for 1, &c. The future course of the American iron trade is, of course, largely dependent upon the turn taken by American railroad affairs, and it is certainly satisfactory to see that there is a tendency to avoid anything like reckless construction, and to keep new railroad commitments within more moderate limits than at one time seemed probable.

### REVIVING TRADE.

It is satisfactory thus early in the new year to find indications of reviving trade springing up all around. There has been such chronic depression in all our staple industries that such revival will be specially welcome, but the "hope deferred which maketh the heart sick" has met with so many and oft disappointments that the statistics and data upon which the present trade revival is based are received with caution, and the glowing prospects which have already been put forward in some quarters are very properly discounted with large percentages. There can, however, be no doubt that for several months past there has been a gradual revival of trade in almost every department of our national manufactures, and that pig and manufactured iron has advanced from 10s. to 20s. a ton. The improved trade which has recently set in was undoubtedly in consequence of the demand from America, and it is to this country principally that we shall have to look for a continued and improved prosperity. In the past two or three years there has been such immense emigration to the United States that America has been compelled *volens volens* to rapidly extend her railway system; it fact, last year it proceeded at an unexampled pace, the grand total completed being nearly 10,000 miles. We in England can scarcely estimate the magnitude of these works, but some idea may be formed of them when we say that it is estimated that they nearly equal the whole of the railways having their termini in London. For the last three years our export trade to America has been greater than during any previous period, the nearest approach thereto being during the three years 1870-1872. But remarkable as has been the expansion of the railway system in America, and the consequent growth of an export trade with the United States, if we can credit the recent advices, the year on which we have just entered and its successor will witness an activity which has had no parallel in the previous history of that country.

The "New York Commercial Chronicle" announces that "no less than 16 thousand miles of new lines have already been surveyed, and arrangements made for their completion during the next 12 months." Over 7000 miles were laid during the year 1880, and about 8000 during 1881, so that judging from these facts there is nothing improbable that the number of miles indicated will be built and equipped during the ensuing two years. The completion of such an enormous mileage of new rails, together with the renewals necessary for keeping in repair something like 100,000 miles, must necessarily create an enormous demand for both steel and iron rails, and will cause greatly increased activity in all the various departments of our metallurgical industries. Of course with this improved demand for railway material the United States has enormously increased her own productive power; in fact, during the past 20 years this productive power has considerably more than doubled, but it is still

unable to keep pace with the demand, as the constantly increasing exports from this country testify. This expansion of railway enterprise, or "boom," as the Americans term it, is already exercising its full effects upon various branches of trade, and latest advices inform us that machine shops are full of orders, and that locomotives which two years ago were worth about \$5000 now command nearly double the money. The various tool shops are full of orders, and notwithstanding they are working at "high pressure," they cannot supply the demand, and orders are consequently sent over to this country both for locomotives and tools, and that in spite of the protectionist tariff which prevails.

But whilst fully admitting that the immediate prosperity of the steel and iron trades of this country depend principally upon the requirements of the American markets, there are other fields for British enterprise which present cheering and hopeful indications. Our own colonies are rapidly growing in commercial prosperity, and as a natural sequence, there is a corresponding expansion of railways. For some reason or other, the tide of emigration for the past three or four years has mainly set in for the United States, but there has also been a steady increase to the Australian colonies, so much so that several new and most important lines of rail have been mapped out for early completion, and England may certainly fairly anticipate a large proportion of the materials necessary for their completion and equipment. In our Indian Empire also there is a gradual expansion of railways, and there is every probability that this expansion will increase far more rapidly than it has hitherto done. Then, again, Africa is being opened up to civilisation, and we may rest assured that British enterprise and capital will be fully equal to the importance of the pioneer in this new field, and the introduction of the "iron-horse" into that benighted country will be the means of opening up trade and commerce to an extent of which few can now form an adequate idea. Our outlook, then, for the present year is most hopeful; and although doubtless large stocks and possibly dearer money will tend to check any great inflation of prices, there is reason to believe that the present healthy expansion is based upon solid and permanent foundations. For the past year or two there has been a gradual growth in our exports to other countries than the United States, until last year, these exports exceeded those of the year 1879 by some 500,000 tons. Our principal shipbuilding and our engineering firms are in full work, many of them having contracts which with every effort they cannot complete for the next 12 months. The only cloud which we see on the horizon of future prosperity is the wage question. In some quarters the men are already agitating for an advance, but if they are discreet, they will be careful not to be so unreasonable in their demands as to check the tide which has already set in, but which unwise agitation can easily impede.

**IS THERE COAL UNDER LONDON?**—The above question, after lying dormant for a considerable time, has been again raised by Prof. Judd in a lecture at the London Institution. The facts given were such as have appeared in the Journal, and were evidently as fresh as ever to the audience. The question was first brought forward a good many years ago by Mr. M. Dunne, and was taken up by Mr. Godwin-Austen in 1855, and since then has incidentally turned up at different times. Mr. Prestwich, it appears, agrees with Mr. Godwin-Austen as to the extension of the coal formation beneath the cretaceous rocks lying between the coast opposite Calais and the Somersetshire coal field, believing that the coal measures which tail out under the chalk near Theroanne probably set in again near Calais, thence are prolonged in the line of the Thames Valley parallel with the North Downs, and continues under the Valley of the Kennet into the Bath and Bristol coal area. Mr. Hull would also appear to coincide with the views of Mr. Godwin-Austen on the subject. We have no desire to go over the ground, interesting as it is, with respect to coal being found near the Metropolis, seeing that it has long since, to our thinking, been thoroughly exhausted, and that very little that is new can be brought forward as regards it, our object being to endeavour to have the question solved, so that nothing relating to it should be left in doubt. Everything appears to favour the idea that coal will be found on the line indicated by Mr. Godwin-Austen, and this is strengthened by the borings of the New River Company at Cheshunt and Ware, when the borer brought up solid cores containing fossils from the Devonian and Upper Silurian beds showing the continuity of the predicted ridge of the old rock and the great probability that the coal measure will be found where it has been frequently stated they were. The question is one of truly national importance, and should be treated as such, and we cannot believe that it will be allowed much longer to remain in abeyance. It would not be a very serious matter to have a series of borings made at different points, as has been suggested on more than one occasion. It may be that the Government would not feel inclined to take the matter up, as it might be considered more especially the province of those who would be immediately benefited by it. From that point of view the landowners are those who would be most benefited by the discovery of coal. At the present time a large landowner in the West Riding of Yorkshire is boring to a great depth in a district where coal has been considered some distance from it, yet he is not relaxing his efforts because of the opinions of others. But were the coal to be met with on the said line indicated it would be of much greater value than any that can be found in Yorkshire. There should, therefore, one would think, be no great difficulty in landowners joining in the expense and putting the Diamond or some other borer in operation. No matter who takes the initiative, the problem should be solved by some means or other, seeing that it is one of the greatest possible importance, not only geologically but nationally as well.

**RATING OF ROYALTIES.**—Considerable excitement has been observable during the past fortnight among the Merthyr Board of Guardians, one member having advocated the assessing of royalties and wayleaves on the ground that these represent improved valuation. As an instance it is stated that from a small estate near Merthyr during 1880 no less than 141,650 tons of coal were raised, and 5999*l.* paid for royalty and wayleaves, which it is said was wholly free from local taxes. It is beyond question that the 5999*l.* is no more liable to taxation, the occupier having paid taxes on the colliery, than is the landlord of a house to pay again the taxes which have been already paid by the tenant.

**THE GOLD TAX IN BRAZIL.**—We have been requested by Mr. John Hockin, the managing director of the St. John del Rey Mining Company, to notice the articles which have been published in the Anglo-Brazilian Times with regard to the Minas Geraes gold tax. The writer says—A few months ago, from authoritative information, we announced with rejoicing that a new mining law had been prepared by which mining in Brazil would be placed upon a proper footing, be facilitated and be protected, with the direct guarantee of imperial legislation, from the attacks of provincial urubás. But this grand regulation of mines is now before us, after the amendatory process to which it had been subjected in the Council of State, replete with fines and penalties, with extravagant exactions, with despotism of fiscal engineers, and without a single clause to protect the capitalist from similar provincial extortions to those which have characterised the legislation and the collectorial action of the province of Minas Geraes toward foreign mining enterprise. It appears that during the last few years Acts have been passed by the Provincial Legislature imposing a tax on the gold produced by the mine. The first act imposed a tax of 4 per cent. on the gross product of the mines. This, on being violently opposed, was reduced to 4 per cent. on profits. This year the tax has been again imposed on the gross products: 2 per cent. was the rate proposed, but it was reduced after influential protest to 1 per cent., at which rate it at present stands. It is stated that the Imperial have declared that mines of gold—being royal mines—are not subject to provincial taxation on the gold produced. But though the law on the subject has been fully admitted by the Imperial Government, no steps have been taken to uphold the law of the empire, nor to restrain the action of the Provincial Legislature. It is urged that foreign capital almost alone is embarked in mining enterprise in Brazil. The companies formed for prosecuting these undertakings exist under royal licence, and



embarked their capital, subject to the laws of the empire, which exempt royal mines from local taxation. They now find themselves threatened with local taxation on the gold they produce, though exempt by the laws of the empire. Assuming the gold mines to contribute to the revenue of the country as royal mines there can be no doubt that it is most inequitable to levy a tax on produce, it being a recognised legal principle that a given tax ought not to be levied twice on the same thing. The tax on profits, whatever may be the percentage, would be less objectionable since it really corresponds exactly with income-tax at home; but a tax on gross produce is on every ground untenable.

**COLLIERY MANAGERS' CERTIFICATES—EXAMINATION AT WOLVERHAMPTON.**—An examination of candidates under the Mines Regulation Act for mine managers' certificates was commenced at the Town Hall, Wolverhampton, on Monday. The examination is not confined to candidates resident in the district, and is conducted under regulations laid down by the board of management appointed by the Home Office. The examiners are—for chemistry and applied mining, Mr. W. Fairley, of Beaudesert, near Rugeley; mechanical engineering, Mr. John Davies, of Wolverhampton; surveying and the laying-out of collieries, and practical mining, Mr. John Williamson, of the Cannock and Rugeley Collieries. The number of candidates who presented themselves for examination was nine, of whom six reside in South Staffordshire, one is from Derbyshire, one from South Yorkshire, and one from Durham. The candidates are principally students who have been articled to mining and mechanical engineers, and one is a working miner who has filled the office of miners' agent in the district. The candidates are examined both orally and by means of papers. The secretary to the board of examiners is Mr. W. Blakemore, of Heath Town.

#### LA PLATA MINING AND SMELTING COMPANY.

It has already been announced that the dividend out of the December profits, at the rate of 12 per cent. per annum on the capital of the company, had been declared and made payable on Feb. 1. The details circulated with the dividend warrants show that the profit for the month was \$20,110-20, of which the dividend just mentioned absorbed \$20,000, leaving \$110-20 to carry forward. The smelting statements for the five weeks ended Jan. 7 show that 537 tons of ore were received, and 4931 tons smelted, the produce being 88,480 ozs. of silver and 725 tons of lead.

The advices from the works of Leadville continue favourable. In the last received, dated Dec. 27, the manager says: "I promised you a new furnace in six weeks. By comparing dates you will see this promise was kept. We started No. 6 on the 13th inst., but as improvements both in machinery and blast-furnaces are sometimes likely to go against their inventors, and as I had made several important additions and improvements, I thought it wise not to write to you until the success or failure of the venture was positive. The practical operation of the new plant for two weeks gives me liberty to state with much pride that the success is beyond anticipations. The new machinery has not given a moment's delay or a particle of trouble since starting the new furnace. Our capacity has increased to a daily average of 160 tons. This addition, and the continued good work of the other furnaces, indicates a considerable increase in our earnings for the month of December. Ores are still pressed on us to a considerable extent in excess of our capacity, and though we have many offers from miners who would gladly become new customers of ours, we have to refuse them. At the mine everything is in a healthy and prosperous condition as usual. The cross-cut from Gnesen incline is completed, and we are hoisting ore from the south and east workings through this new avenue. This addition has increased the output of the mine to a daily average of 62 tons. The new developments are astonishing, and the mine never looked better at all points than it does to-day."

#### TAUNUS SILVER-LEAD AND COPPER MINING COMPANY.

**Daisbach, Feb. 1.**—Nothing particular to report this week. The underground men, except those from the 17 metre level, are at surface preparing the ground, &c., for the dressing works, which are being pushed on as fast as possible. The lode in the rise over the 17 metre level is large, but the lead course is smaller at present than when last reported. The new cross-cut is being driven very satisfactory in the past week. We have driven 21 ft.; this, I think, is very good driving, considering it is all in blasting ground. We are trying the boring machine principle, and find it answers very well, and I hope to drive the same quantity of ground this week.—W. HOLLOW, Manager.

**Ens, Jan. 25.**—I went to your mine at Daisbach on the 21st inst., and there took down the necessary details in order to construct the dressing establishment desired. The ore is very rich, and by properly and rightly carrying on the mine and the dressing works a large profit may be expected.

EDWARD GEYER.

The following refers to an assay of ore from this mine:—

We have examined the samples of lead ore (10) marked as under, and find the following to be the result:—		Produce of Lead.		Produce of Silver ozs.	
By Fire Assay.	No. 1	81.5 per cent.	9-100	11-800	
Galena	No. 1	81.5	9-100	11-800	
Smelting ore	" 2	74.8	"	"	
"	" 3	77.0	"	10-200	
"	" 4	73.5	"	11	
Nov. 15 Silver	" 5	82.7	"	7	
By Wet Assay.		Lead contents.		Silver ozs.	
"	No. 1	69.0 per cent.	7-900	7-900	
"	" 2	61.0	"	9-100	
"	" 3	67.0	"	8-700	
Nov. 15 in No. 5	" 4	68.5	"	7-200	
PER TON OF 20 CWT. OF ORE.					
JOHNSON, MATTHEY, and Co., Assayers to Bank of England, Her Majesty's Mint, &c.					

#### DEVON GREAT CONSOLS.

The shares in this mine have advanced to 8½, 9½, and in great demand, with a decided upward tendency, owing, no doubt, to the circular of the Chairman and managing director (Mr. Peter Watson) received yesterday announcing that a highly satisfactory contract had just been sanctioned by the directors at their board meeting (on Thursday) for the sale of 25,000l. worth of Devon Great Consols arsenic, to be delivered and paid for this year. This most unexpected but welcome information must indeed be highly gratifying to the shareholders, as it need scarcely be pointed out to them that this is the second largest contract for arsenic ever entered into by this company, or by any other, and out of which a large profit should be realised. In addition to this good news the shareholders will have observed the greatly increased and increasing monthly realisation for copper ores. Last month's sale of copper ore realised 24,000l. and about 950 tons copper ore are sampled and for sale this month, so that the returns of mineral are now quite equal, if not more, than when the shares were selling at 18l. to 20l., or double the present low quoted prices. The mines and the general prospects are likewise said to be much improved, and indeed it would appear that some important discoveries are likely soon to be made. These mines were once selling at a marketable rate of 800,000l., whilst they are now selling for only about 80,000l. to 85,000l., having the finest and largest stock of machinery and plant on the mines of any metallic mining company in this country, with large reserves of copper ores and mundie (arsenic), with all monthly costs and charges, and merchants bills, &c., paid closer up (to end of December) than perhaps any large mine in the two counties of Cornwall or Devon.

The capital called up in this company is 10,240l. (being 1l. per share on 10,240 shares), whilst the dividends to the shareholders (154 dividends) have been 118l. 7s. per share, or a total amounting to the sum of 1,211,924l.

It should, however, not be forgotten that whilst shareholders have received such magnificent dividends on such an insignificant outlay by them, there has been the enormous sum expended in the purchase and erection of machinery and plant, steam engines, water wheels, railway, reduction (arsenic) works, pitwork, &c., all provided and

paid for out of revenue (not by shareholder's capital) the sum of 400,000l., or equal to a further sum of about 40l. per share. As was justly stated some time ago this property consists not of one single mine only, but a run of several extensive mines and manufactories not to be equalled in this country.

## SOUND INVESTMENTS.

**GRAND TRUNK RAILWAY OF CANADA.**—There have been wide fluctuations in these stocks during the past month, due to the variable rumours which have prevailed as to the termination of the "war of rates" in America, and to the general depression consequent upon the financial crisis in France. Since this railway war commenced last June, English investors have loudly complained of the injury done to their interests by the administrators of American lines in provoking the struggle, and it now appears that public opinion in America is being similarly roused on the subject. The Chronicle (the leading financial journal of New York), Jan. 21, states:—"There is pretty widespread feeling of disgust over the whole of this trunk-line manipulation. It seems as if great interests had been trifled with for petty, personal profits. The public had begun to think a great principle was at stake; but it appears to be simply a 'bull' and 'bear' fight, in which operators who are outside the charmed circle of railroad presidents, their relatives and associates, must stand aside." Happily, there seems at last a prospect of an end to this ruinous struggle. Through the reduction in the grain rates during the past half-year about 80,000l. was lost by the Grand Trunk, but this was largely recouped by augmented receipts from passenger traffic amounting to 40,000l., and the Chicago line has been able, principally from the same cause, to show an increase in gross receipts for the half-year. This proves vitality and an improving business along the Grand Trunk and its tributaries.

**MEXICAN RAILWAY COMPANY.**—For the past half-year ending Dec. 31, the increase in traffic reached the handsome total of 91,500l., thus ensuring a dividend of 7 per cent. per annum, which, with the payment of 8 per cent. for the previous six months, will make a total of 7½ per cent. for the year.

The receipts for the past four weeks have shown further development, the increase amounting to 6400l., or an average of 1600l. per week. This is in excess of the period in 1881, when 8 per cent. was earned, and is the more important, seeing that, unlike English railways, no new capital has been (or will be) created. The whole of the requirements for capital purposes (other than the relaying of the line with steel rails, which has already been paid for out of revenue), are fully provided for by the subvention annually paid by the Mexican Government. The laying of steel rails is now nearly completed throughout, and the subvention money, as explained at the recent meeting, will soon be available for buying up the Debenture Stock to the permanent benefit of net revenue.

Notwithstanding that the past half-year's dividend is included in the present quotation, and that current earnings point to the payment of 8 per cent. for the ensuing six months, the Ordinary Stock, through the exceptional condition of the markets, has been depreciated in value to a level which would make it cheap if only 5 per cent. should be earned. The intrinsic merits are such as would justify the Ordinary Stock being now quoted at par (100), the 8 per cent. 1st Preference at 150, and the 6 per cent. 2nd Preference at 110, and if the original shares of 20l. each had not been converted into stock, there is no doubt the equivalent of such values would now exist. The ordinary shares would have appeared cheap at 20l. (or 100l. for stock), earning 8 per cent.; 1st Preference at 25l. (or 150l. for stock), earning 8 per cent., and 2nd Preference at 22l. (or 110l. for stock), earning 6 per cent.

The recent successful establishment of the Bank of Mexico, the granting of a subvention to a new line of steamers trading between France, Spain, and the port of Vera Cruz, the progress of the works in connection with the new lines (as indicated in the map which I published last month), the great increase in the Customs receipts and the growing immigration, all point to the advancing prosperity of the country, and from which the Mexican Railway must derive much benefit. About 80 miles of the new central line have just been opened, which will soon bring traffic to this system.

The past half-year's dividends are still included in the quotations; but without regard to this the Preference and Ordinary Stocks can now be bought to return very handsome results to present investors: thus the 8 per cent. 1st Preference yields 6½ per cent., the 6 per cent. 2nd Preference 6½ per cent., and the Ordinary Stock (if only 7 per cent. should be paid) 8½ per cent.

**PHILADELPHIA AND READING RAILWAY.**—All who are interested in the welfare of this great property must have experienced a sense of relief during the past month on the termination of the contest for the Presidency. The re-election of Mr. Gowen by so large a majority of both American and English votes establishes beyond all question his right and fitness for the office. The reorganisation of the finances, of which the Deferred Income Bond scheme forms a part, will now be actively proceeded with, and no doubt Mr. Gowen will be in a position to fully explain his plans at the meeting, which will be called immediately after his arrival in England during this month. Meantime, it is satisfactory that the earnings of the company are steadily improving.

**NEW YORK, PENNSYLVANIA, AND OHIO RAILWAY.**—At the present price the 1st Mortgage Bonds must be cheap, if only purchased as a "lock up" security. Arrangements are maturing for a change in the administration, which has been unsatisfactory for some time past.

**GREAT WESTERN RAILWAY.**—The announcement of a dividend at the rate of 7½ per cent. for the past half-year has exceeded the most sanguine anticipations. In view of this circumstance, the recent immense growth of the traffic, and the general prosperity along the line, I continue to strongly recommend investments in the Ordinary Stock as one of the cheapest in the market.

**GREAT EASTERN RAILWAY.**—The steady progress recorded in this company's report is most satisfactory, and considering the agricultural depression last year, the dividend of 3½ per cent. is favourable. The New Ordinary Stock to be issued at the price of 65 will not rank with the existing stock until July, 1883, and as the Northern extension will be opened next July, there will be nearly a year wherein to develop the traffic from this important source before any extra charge is made upon the revenue.

**CORNWALL MINERALS RAILWAY.**—The receipts for December again show great improvement, being nearly 40 per cent. in advance of last year. The mines now being opened out are adding largely to the mineral traffic, while the passenger business will receive a considerable impetus from the contemplated improvements at New Quay, chief amongst which is the establishment of a water company, which has become an absolute necessity, owing to the rapid increase of the town as a seaside resort on the Atlantic.

**ISLE OF MAN RAILWAY.**—There has lately been an increased demand for these shares, and the price improved 5½ to 5½. The principal market for them is in Liverpool, where they are better understood, from which source the buying has principally proceeded.

**TRAMWAYS.**—The dividends for the past half-year already announced have been better than expected, being as follows:—North Metropolitan 9½ per cent., Glasgow 10 per cent., Provincial 7 per cent., Edinburgh 6½ per cent., London Street 6½ per cent., London 5½ per cent., German 6 per cent., Calais 6 per cent., Dublin United 5 per cent., Hull 3½ per cent. Although these properties have been long neglected they are paying good, and in most instances increased dividends, and no doubt they will soon again become popular investments. The cheapest tramway shares at the present time are, in my opinion, those of the German, Calais, and Bordeaux Companies.

**LOMBARDY ROAD RAILWAYS.**—Since the opening of the section connecting with the manufacturing town of Brescia last month the traffic has decidedly improved. Several applications have been made by manufacturers on the route to connect (at their own expense) their works with the line, and a large increase of goods

traffic will no doubt result. The 10l. fully-paid shares can be bought at par, ex dividend, and they have a guaranteed interest of 6 per cent.

**CANADIAN COPPER AND SULPHUR COMPANY.**—These shares have receded, notwithstanding the very favourable statements made at the meeting of shareholders, when the Chairman remarked that he and his family were, "within one or two, the largest shareholders," and that he had "the greatest confidence in the future of this company." If shareholders will carefully study the full report of the meeting which has been sent to them, I think they will regard these shares at the present reduced quotations as a cheap and attractive mining speculation.

**ELECTRIC LIGHT COMPANIES.**—The report of the Brush Company has been issued, and shareholders ought to be well satisfied with the great success already attained, especially as at the meeting the Chairman stated the demand for this luxurious system of illumination is rapidly increasing. The field for this and other well-established companies is practically illimitable, and the Electrical Exhibition at the Crystal Palace will no doubt give a great stimulus to the enterprise.

**TELEPHONE COMPANIES.**—The shares of the United Telephone Company recently advanced to 13, 5l. paid, and the Consolidated Telephone Construction and Maintenance Company to 14, 11l. paid, or 160 per cent., and 50 per cent. premium respectively. Having strongly recommended investments in these securities, and especially the latter, the rise in value is particularly gratifying to me.

**INDIAN GOLD MINES.**—These shares continue dull, and although I have made diligent enquiry respecting each individual company I am unable to discover the slightest justification for their being so. The transfer departments show that but few shares have changed hands of late, and it would therefore appear that the reaction is solely due to sympathy with the prevailing depression. Short of the absolute intelligence of successful crushing, the advices received by each company from India continue as favourable as could be desired. The Governor of Madras, in his recent visit to these Wynad gold fields, inspected the various properties, and having witnessed the process of extracting the gold (some samples of which he took away with him), he publicly stated that "his spirits were greatly raised by what he had seen." Such an opinion from so responsible an officer of the Government is particularly welcome at the present time of depression, as it affords further testimony (if such were necessary) to the merits and prospects of gold mining in India. The Trevelyan Company have now commenced crushing, the result of which will be known in a few weeks. The Phoenix will probably start this month; meanwhile arrangements are being made for working the valuable alluvial deposits recently discovered. The proposed amalgamation of the South Indian and Glenrock Companies will, I think, prove very advantageous, and conduce to economical working. The advices received from both properties are most satisfactory. In view of these circumstances the shares must be better worth buying now than at any former period, as the time is close at hand when results will be known, and quotations are at the very lowest.

**JOINT STOCK BANKS.**—I publish herewith my usual half-yearly analysis of the balance-sheets of the joint stock banks of London, the figures in which will, no doubt, prove interesting to shareholders or intending investors in this class of securities. The ten banks enumerated, with two trifling exceptions, show increased earnings amounting to 40,725l., and while the total net profits were nearly 17½ per cent. of the paid-up capital, only 14½ per cent. was paid away in dividends, thus enabling a further addition of 138,466l. to be made to the reserve funds, which now represent nearly 44 per cent. of the aggregate paid-up capital. The shares can be bought to return an average of 5½ per cent. to present investors, the two leading limited banks (the London and Westminster and the London and County) yielding 5l. 2s. 6d. per cent. and 5l. 8s. 10d. per cent. respectively. Very little change has taken place in the value of the shares, the only conspicuous alteration being an improvement of 3l. 7s. 6d. per share in the case of the London Joint Stock Bank, which is attributable to the announcement made by the directors at the recent meeting that they contemplated taking the necessary steps for registering the bank as "Limited."

**LA PLATA MINING AND SMELTING COMPANY.**—An increased dividend for February has just been paid at the rate of 12 per cent. per annum, comparing with the 9 per cent. which has been distributed every month for nearly three years past. Notwithstanding this great improvement the shares have only slightly risen in value, and but for the heaviness in surrounding markets there is no doubt they would have advanced considerably. The monthly report just issued states in respect of the recent starting of the new furnace, "that the success is beyond anticipation." It adds: "Ores are still pressed on us to a considerable extent in excess of our capacity, and though we have many offers from miners who would gladly become new customers of ours, we have to refuse them;" and with reference to the mines owned by the company: "Everything is in as healthy and prosperous condition as usual. The new developments are astonishing, and the mine never looked better at all points than it does to-day." It is very difficult for English investors to fully comprehend the reality of the extraordinary growth of this property, but it is really insignificant compared with its surroundings. The town of Leadville, where it is situated, was a mere camp of a few explorers four years ago, while now, owing to the great mineral wealth discovered, a town has grown up having 30,000 inhabitants and possessing every feature of advanced civilisation.

An investment in the shares at the present price, and presuming the dividends to be re-invested in them every month, the net return at the end of the year (without considering any possible further increase of dividend or augmentation of capital value) would be about 13 per cent.

—From Mr. WM. ABBOTT'S Circular for February, 16, Tokenhouse Yard, London, E.C.

#### GOOD NEWS FOR INDIAN GOLD MINE SHAREHOLDERS

An interesting gathering of scientists, financiers, and others took place at the Royal Hotel, Blackfriars, on Thursday evening, when Mr. T. A. Readwin briefly referred to his new process for the treatment of gold bearing ores. He does not claim to recover all the gold, but an ample quantity to make the process, which involves an outlay of only 1s. 3d. per ton, remunerative. Its leading feature is that he so manipulates the mercury that whatever may be the nature of the ore under treatment the mercury retains its normal condition, and the gold is quickly and economically extracted, whether free or associated with sulphides, tellurides, bismuthides, or anything else that hides the gold when submitted to ordinary treatment. With regard to the application of his process to the treatment of poor auriferous ores, he remarked that in Wicklow there were 1,000,000 tons of mineral which had been thrown aside, although containing over 2 dwts. of gold to the ton, the explanation of which was that when Wicklow was the chief source of supply for sulphur ores the mineral could not be sold if it were so small as to pass through a ½ in. sieve. Thus the refuse really contained what for his purpose would be the most valuable, and he believed that as the Spanish and other foreign ores had been produced so cheaply that they had thrown the Wicklow ores out of the market, so the extraction of the gold would again transfer the trade to Wicklow.

The gold if extracted by his process would more than cover the entire cost of mining and treatment, and if when they obtained their sulphur ore for nothing they could not compete with any producers in the world it would much surprise him. With regard to the gold deposits of Wales, Mr. Readwin stated that on Monday 130 ozs. of gold from the Clogau Mine was weighed at the Crown Office at Dolgelly, being the produce of 1300 lbs. of ore showing visible gold. The present appearance of the stratum at this mine is said to be most encouraging, and to bid fair to yield a larger quantity of gold than at any time during the past 25 years. The amount of visible gold found in the quartz during the last week or two is larger than was ever found before by the oldest miner. Mr. Readwin observed that he had been labouring at the matter for 25 years, and believed he had now completely succeeded. It is understood that an influential company is in course of formation for developing the invention, and



that many who are largely interested in Indian gold mines have promised their cordial support to facilitate the testing and adoption of the process.

### Lectures on Practical Mining in Germany.

#### CLAUSTHAL MINING SCHOOL NOTES—No. CLXL.\*

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No. 1. (c).—Arrangement with two ropes from two hauling engines, fixed one at each end of the roadway. (German: *Forderung mit Seil und Gegen Seil*.) This is, perhaps, the simplest of all the arrangements for mechanical haulage, though it would be out of place in many English collieries, where the seam is only reached by two shafts placed near each other. It is best adapted for mines having a day hole and a shaft, or for hauling along main levels running across several seams, where one end of the level comes to the surface, and the opposite end is situated near a shaft. When this is the case one engine is placed near the mouth of the level, and the other near the bottom of the shaft. Or the latter engine may be placed at the surface, and the rope passed down the shaft. The winding drum of each engine should be so arranged that it can be disconnected from the engine, and provided with a brake. This arrangement allows of the corves being taken to and from any point in the roadway; but when this is the case a double line of rails will be necessary at each station. The engines require no reversing gear, and may therefore be of the simplest construction. A single line of roadway is used, which, however, branches into two at the hanging on and landing places. Whilst the train of corves is traversing the roadway a run of full corves is prepared at the hanging on place, and a run of empty corves is prepared at the landing place, and a run of empty corves at the landing place. No moveable tongues are necessary at the ends; the rails can be so arranged that the engines haul the full corves on to the full road at the landing place, and the empty corves on to the empty road at the hanging on place. This arrangement allows of the number of corves in a run being varied at will.

The hauling arrangements at the Von der Hydt Colliery, Saarbrücken, is a good example of this mode. The hauling takes place from three points in the Von der Hydt adit. One engine is placed near the mouth of the level, and the other at the opposite end of the adit, 2000 yards distant, close to the Krug shaft. The boiler for the latter engine is placed at the surface, and the steam pipes are carried down the Krug shaft. The engines are horizontal, single cylinder; that at the mouth of the adit drives the hauling drum by belt gearing, that at the bottom of the Krug shaft by spur gearing. Trains of corves are hauled also from two intermediate points in the adit—where the adit intersects the Karl and Heinrich seams, 1850 yards from the mouth of the adit, and from an incline 1220 yards from the mouth of the adit. The roadway has only a single pair of rails, except at the ends and at the two points just mentioned. Bearing pulleys for the rope are placed 20 ft. apart. Each run of corves is provided with an empty corf at each end, specially arranged for connecting with the ropes. A conductor rides in the corf attached to the hauling rope. (Each rope is alternately a hauling rope and a tail rope.) The draw-bar of the conductor's corf is provided with a double swivel joint at the end, to which the rope is attached, in order that the trailing rope may accommodate itself more readily to the bearing pulleys. The arrangement appears superfluous. The number of corves hauled at a time amounts to 80, and a speed of 10 feet per second is adopted. The corves hold 10 cwt. This gives 40 tons hauled 200 yards (24,000 ft. tons) per minute; or from the Karl and Heinrich seams one run per 20 minutes, or about 1000 tons per shift of 9 hours.

No. 2. (a).—THE TAIL ROPE SYSTEM. (German: *Forderung mit Vorder und Hinterseil*.)—One hauling and one tail rope. The general principle consists in having the two winding drums side by side, to one of which the hauling rope (German: *Vorderseil*), and to the other the tail rope (*Hinterseil*) is attached. The tail rope passes round a pulley fixed at the opposite end of the road. The portion of the tail rope from the drum to the pulley may be carried along the floor, side, or close to the roof of the roadway, as is found most convenient. The two drums are usually driven by one engine, and are arranged so that they can be coupled to or disconnected separately from the engine. When the run of loaded corves is to be drawn the main rope drum is coupled to the engine, and the tail rope drum is thrown out of gear, and *vice versa* when the empty run of corves has to be hauled up into the workings. The reason for having loose drums lies in the fact that where the length of the journey is great the rope must be coiled upon itself several times, as a drum to take the whole length of rope with one thickness only coiled round the drum would have to be excessively long, equal in length to the thickness of the rope multiplied by the length of the journey and divided by the circumference of the drum. With the rope coiled itself on one drum and uncoiling itself from the other, the virtual diameters of the drums are constantly varying, and consequently the amount of rope paid out at the commencement from one drum would be greater than that taken in on the other drum, and the converse would take place towards the end of the run. As the arrangement with one hauling and one tail rope is single acting there is only one line of rails on the roadway, except at the hanging on and landing places, where the roadway is divided into two, one for the empty run of corves and one for the full run. The junction is provided with a pair of switches, so that the run of corves can be turned on either set of rails, though each is not generally used alternately as a full road and empty road. In place of having switches which require to be moved by the attendant, the switches can be made automatic to close either by the action of a spring or by means of a bell crank lever, weighted at one end, and attached from the other end by a rod to the moveable switches. As the usual case we suppose that the landing place is not far from the bottom of the shaft, and that the full corves are taken by hand direct to the shaft from the landing place. The landing place should have an inclination downwards towards the shaft of 1 in 200 to 1 in 120.

In many English and also some of the continental mines it is usual to give a similar inclination from the shaft, to facilitate the moving and ranging of the empty corves. If the general inclination of the roadway is downhill from the shaft, the above inclination downwards of the empty road should be followed by a short quick rise to prevent any of the corves getting off by themselves down to the main incline. Where the road is horizontal it will be necessary to have a short quick rise of the full road and dip of the empty road at the end of the station furthest from the shaft, in order to secure the above conditions. We will also suppose as the best arrangement that the roadway does not come in a straight line to the pit bottom, but slightly to one side, so that the corves must be brought round a sharp curve to the pit bottom. The hauling engine can then be placed in a straight line with the roadway. The main rope from the hauling engine is somewhat below the level of the rails to the straight portion of the roadway, where it is brought slightly above the level of the rails. When the full run of corves has been got ready the main rope drum is coupled to the engine, and the tail rope drum is thrown out of gear, but placed under control of the brake. Before the train of corves arrives at the landing place the switches are opened for the roadway which is empty, the other road being occupied with a train of empty corves, which has been got ready in the meantime. When the loaded corves arrive at the landing place the engine speed is suddenly slackened, so that the rope can be disconnected, and it is thrown by the attendant into the centre of the roadway clear of the rails. The impetus of the full corves will carry them forward until checked by the tail rope. When the end of the tail rope has arrived level with the first corf of the empty

train it is thrown off. It may be found advantageous to loosen the main rope from the train before it arrives at the switches, the rope being carried below the rails at the points, and after being loosened is pulled so far back by the engine that it can be conveniently attached to the last corf in the empty run. The attachment of the corves to the rope may be so arranged that the rope can be loosened before the strain is taken off. The tail rope is now attached to the first corf of the empty run, the tail rope drum coupled to the engine, and the main rope drum disconnected, but placed under the control of the brake. Whilst the empty corves are being taken back into the workings the next full run is being completed at the hanging-on place, and the formation of a fresh run of empty corves commenced at the landing place.

In many of the continental mines it is usual to attach a corf to one end or both ends of the run of corves, in which an attendant rides. The corf for the attendant is always the last in a train. The object in having an attendant is to be able instantly to signal to the engine man if anything goes wrong. Where one corf only is provided for the attendant it will be necessary to lay down junctions at each end, so that the corf can be run from the last end of the incoming train of corves to the last end of the outgoing train. The incoming train must in this case be drawn by the engine or pushed forward by hand completely past the outgoing train. In either case the arrangement causes some inconvenience and loss of time; it is, therefore, more advisable to provide three corves, one of which only is attached to the back end of the outgoing train of corves, the other two being pushed forward as the corves of the last train are pushed forward to the bottom of the shaft, or taken off into the workings, so that each attendant's corf is advanced sufficiently far to be transferred to the end of the outgoing train when the proper number of corves have been linked together. Thus no time is lost at either end. When two corves are provided for the attendant they are attached the one to one end and the other to the opposite end of the train. Two junctions must then be provided at each station. The attendant travels in the corf attached to the main rope during the ingoing journey, and in the corf attached to the tail rope during the outgoing journey.

The following example of corf for an attendant is taken from Seegraben, near Leoben:—The bottom of the corf consists of a cast-iron plate 2 in. thick, 5 ft. 6 in. long by 1 ft. 9 in. broad, and is provided on two sides and the front end with a vertical rib 4 in. high and 1 in. thick. The corners of the corf are formed of 2-inch angle iron, which stands 2 ft. 9 in. above the bottom plate. Flat bar iron 1½ in. wide is curved from the top of each angle iron towards the middle of the side, and then vertically downward, the bottom end being riveted to the vertical flange of the plate, leaving an opening in the centre of each side 9 in. wide. The corner angle irons are connected at each end of the corfs by half-round iron rivets to the top of the angle irons. The sides of the corf are formed of sheet iron fastened to this frame. A seat is provided in the front half of the corf for the attendant. The end of the rope, which is drawn after the train of corves, is formed of an eye, to which a long chain link is attached. A rectangular hole, 20 in. long by 3½ in. wide, is cast in the corf-bottom to allow of the end of the rope being passed through it. The rope is fastened to the corf by shooting a flat bolt through the link, the former running in guides cast on the bottom of the corf. The bolt can be moved by a long lever, the leverage of which is such that the attendant can readily disengage the bolt, even when the full strain of the tail rope is upon it. The front end of the corf carries a short drawbar, with which, by means of a short connecting chain, it can be joined to the last loaded corf. In order to keep the rope pressed down at pleasure on the rope-bearing pulleys an L lever is hinged at the back end of the corf, to the short arm of which a small grooved pulley for pressing on the rope is attached. A semi-circular strap, the ends of which are fastened to the pin on which the pulley runs, keeps the rope within the groove of the wheel. The upper end of the lever traverses in a sector provided with notches, so that it can readily be locked in any desired position. In addition a screw brake is provided. The wheels are 14 in. in diameter, and are placed 20 in. apart.

It is not unfrequently convenient to be able to send the run of corves in either direction, with less than the full complement of corves. When this is the case it will be necessary at the station next the hauling engine to slacken out the main rope. At the station furthest from the engine it will be impossible to pull out either of the ropes to make up for the diminished length of the train. It is better, therefore, in all cases to attach the train of corves indirectly to the rope by means of a chain, which is used double for the full complement of corves, and can be let out when the number of corves is lessened.

The corves are most readily attached to each other by having a single link attached to each end of the drawbar. A separate link provided with two hooks is used to attach the corves together, one of the hooks being put through the link at the end of the drawbar of one corf, and the other hook to the link at the adjoining end of the next corf.

### Original Correspondence.

#### EAST WHEEL ROSE.

SIR,—I am requested by my directors to ask you to be kind enough to state that a sample of the silver-lead ore now being raised from Innes' lode can be seen at the offices of the company, that the lode extends for 600 fms. in length above adit in virgin ground, and that the average value of the ore being raised is 12½ per fathom, and the cost of getting it 3½ per fathom.—I remain, yours very truly,  
Old Jerry, Feb. 3. F. HUTLEY, Secretary.

#### OLATHE SILVER MINING COMPANY.

SIR,—The attention of the directors has been drawn to the paragraph relative to this company's property which appeared in the *Mining Journal* of Jan. 28, in which, quoting the Leadville Mining Index (a paper only very recently established), it is said amongst other things that everyone connected with the district knows that the Olathe property, which has been stocked at \$750,000, is not worth as many cents, that the Oolyte, Oregon Bay, and Ingersoll shafts have long since been abandoned, and that it has been attempted to maintain the integrity of the company only by the mantle of respectability and titles of the directors. For your information I am to point out that the Oregon Bay and Ingersoll shafts were abandoned not because they were worthless, but because the persons who were sinking them were trespassing on the Searle Placer claim; while as regards the Oolyte shafts, we have just received an intimation that this mine has been stocked for \$2,500,000, with Governor Tabor at the head of the company.

It is not long since that another "highly respectable" Leadville paper (the *Leadville Daily Chronicle*) reported that the Olathe Company had no title to the property it had purchased; but this, like the paragraph which you have quoted from the *Leadville Mining Index*, was entirely untrue; the company having in its possession at the time the patent itself, and a certificate from their New York solicitors, Messrs. Lord, Day, and Lord, that the title had been proved to their satisfaction. It is no doubt vexatious to read such false statements as have been continually made in reference to this company's property, especially when they gain currency through the medium of so influential a paper as your own; but it would be folly to waste the shareholders' money in bringing actions for slander against proprietors of papers like the *Leadville Mining Index* and the *Leadville Daily Chronicle*. The directors deem it the wisest policy to allow such untruths to answer themselves, as they undoubtedly will when the property is developed. The objects of these attacks on valuable American properties purchased by English companies are well understood in America. HENRY KENDRICK, Secretary.  
Tokenhouse-yard, Feb. 3.

As an evidence of the activity in the iron, engineering, and ship-building yards on the Tyne, it may be mentioned that at the last weekly pay made on Saturday by the Palmer Shipbuilding and Iron Company

(Limited) Jarrow, amounted to within a pound or two of 10,000. This was solely for the men engaged in the Jarrow and Howdon yards, and did not include the men employed by the company at their iron ore mines or in the steamers belonging to the firm.

### TREATING GASEOUS FUEL.

In order to condense and precipitate the volatile and suspended matter contained in gaseous fuel, and thereby to purify it and obtain valuable residual products, and at the same time to prevent the formation of smoke in the burning of the fuel, Mr. SAMUEL LLOYD, of Birmingham, conveys the gases generated by the slow combustion of fuel in a gas generator through passages into a cooling or condensing chamber. Within a cylinder or casing he fixes a series of tubes, which may be flattened or corrugated through the greater part of their length, but cylindrical at their open ends. The gases which have been generated are conveyed from the generator into the said cylinder or casing. The gases are cooled by contact with the tubes, which are kept cool either by the passage of water or air through them. In order more effectually to condense the tar and other volatile matter contained in the gases and to precipitate the dust and cleanse the gas from solid particles, he fixes a series of shelves or trays, with perforations in the cylinder so as to deflect and retard and divide the current of gas in its passage through the perforations in the said shelves or trays. These shelves or trays should be placed horizontally. In order more effectually to cleanse as well as to condense the gas, he injected into the top of the cylinder or vessel sprays of water, which falling down in a shower upon the perforated shelves are still further divided by the said perforated shelves, and splashing against the interior surface of the cylinder or vessel effectually condense the condensable matter and cleanse the gas. The water employed he used over and over again, so as to obtain a solution of ammonia of sufficient strength for commercial purposes.

When the combustion of the gas is employed for the generation of steam, the required draught for drawing the gas through the cylinder may be obtained by the action of the exhaust or spare steam. When the combustion of the gas is not employed for the production of steam, the gas is drawn through the cylinder by the draught caused by the burning of the gas when this is effected in connection with a tall chimney. In situations where a sufficient draught is not thus available, the draught may be obtained by means of a fan or blower. In order to regulate the heat produced by the combustion of the gas and to make it more or less intense at or near the point of ignition, and also in order to regulate the length of the flame as may be required, he compresses air by means of a blast engine or fan and send it forward under pressure together with the gas but in a separate pipe, and then mix the air and gas together at or near the point where the gas is ignited. He introduces more or less air into the gas according to the intensity of the heat required and the length of flame desired; and in order still further to increase the heat from the combustion of the mixed gas and air, he uses regenerators in order to heat the gas and air prior to combustion.

The pipes which convey the gases to the condenser and the passages inside and those connected with the apparatus generally have a tendency to become clogged and furred with the tar and refuse matter from the gases. He meets this difficulty by injecting steam or water at a high temperature, which melts the tar and pitch and other products, and in an inexpensive manner thus cleanses the apparatus. In cases where there is not a supply of water or steam from other sources he passes the necessary water round the gas generator in a water jacket, or heats the water in pipes from the heat of the fuel or gases in the generator, or by the gases in the pipes between the generator and condenser. When it is convenient to do so a rotary motion may be given to the cylinder containing the condensing or scrubbing apparatus. Its efficiency is thereby increased, and a less condenser is required when it is made to rotate than when it is stationary.

The improvements mentioned are applicable both to gaseous fuel obtained by imperfect combustion carried on for the purpose of producing the said gaseous fuel, and to gaseous fuel obtained as a residual or waste product; as, for example, the gaseous fuel evolved by blast-furnaces in the smelting of iron. Mixtures of these kinds of fuel may also be treated according to the invention. Many advantages are claimed to result from this mode of utilising fuel. The fire in the gas generator is quickened or lessened according to the gas required, and remains alight for a lengthened time, even if no gas is drawn off, so that it is constantly ready for use. All the delay, and labour, and expense in extinguishing and relighting the fire is also avoided. The more quickly gas is drawn from the generator the more quickly fresh gas is formed, and the reverse. His mode of utilising fuel is, consequently, more economical than making use of it in open fires in a solid form when all the residual products are lost in smoke.

### DOUBLE-ACTION ROCK-BORING MACHINE.

Some improvements in the construction of rock-drills whereby the compressed air or steam is alternately admitted into opposite ends of the cylinder through ports in the piston of the machine, instead of in the ordinary manner, have been invented by Mr. G. F. WYNN, the secretary of the Minera Mining Company, Wrexham. He proposes to employ a cylinder provided near its centre with a feed pipe, from which are drilled three holes of suitable diameter into the cylinder, three similar holes being also drilled in the bottom of the cylinder for the exhaust as hereinafter described. In the said cylinder works the piston, having a proper piston rod. Two recesses are formed on the periphery of the piston, and its top end is bored out for receiving a nut, so constructed as to form two ports, one at the top and one at the bottom, for the conveyance of air to the opposite ends of the cylinder, the port at the top communicating through the piston with the bottom end of the cylinder, and the bottom port with the top end of the cylinder.

Passages are drilled communicating with the two recesses on the outside of the piston and with the two hereinbefore described ports inside the piston, so that by this arrangement one of the recesses of the piston communicates with the top end of the cylinder, and the other recess with the bottom end of the cylinder. The twisting arrangement, the cradle feed screw and tool holder are substantially the same as those now generally employed for this class of rock-boring machine. If the piston be in the middle of its cylinder compressed air from the feed-pipe cannot enter the cylinder, but if the piston be moved towards one end (say), the top of the cylinder, one of the hereinbefore described recesses on the periphery of the piston will be brought into communication with the holes leading from the feed-pipe, and the air will pass through the bottom part of the piston to the top end of the cylinder, so as to cause the piston to move in the opposite direction until the other recess on the periphery of the piston is brought into communication with the said inlet holes, so as to allow the air to pass through the top port of the piston into the opposite or bottom end of the cylinder, and so on. The exhaust takes place through the three hereinbefore described holes drilled in the bottom of the cylinder, from the top end of the cylinder direct as the piston passes from over them, and from the bottom end of the cylinder through the top recess in the piston when that, in the upward movement of the piston, comes in communication with the hereinbefore described three holes.

### ASBESTOS.

ASBESTOS ENGINE PACKING,  
ASBESTOS MILLBOARD JOINTING  
ASBESTOS BOILER COVERING  
ASBESTOS CEMENT.

ARE UNRIVALLED.

Price Lists and all information from the UNITED ASBESTOS COMPANY (LIMITED):—  
HEAD OFFICES: 161, QUEEN VICTORIA STREET, LONDON,  
WORKS:—ROME, TURIN, AND GLASGOW.

\* Being Notes on a Course of Lectures on Mining, delivered by Herr Berggrath Dr. von GROEDER, Director of the Royal Bergakademie, Clausthal, the Harz, North Germany.



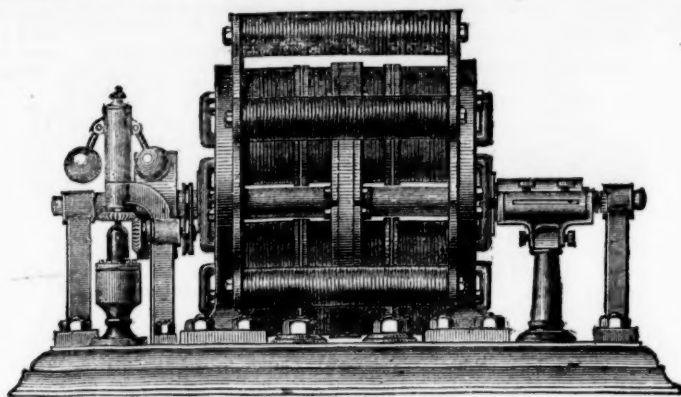
THE DYNAMO-ELECTRIC MACHINE SUPERSEDES EVERY KNOWN BATTERY.

# WILLIAM ELMORE,

## 91, BLACKFRIARS ROAD, LONDON, S.E.

NO OTHER ADDRESS.

PRICES AND  
PARTICULARS  
GIVEN ON  
APPLICATION.



NO AGENTS.

ALL APPLICATIONS  
SHOULD STATE  
THE PURPOSE  
FOR WHICH THE  
MACHINE IS REQUIRED.

### The "Elmore" Patent Dynamo-Electric Machine,

FOR DEPOSITING

NICKEL, SILVER, BRASS, BRONZE, COPPER, ETC., AND FOR ELECTROTYPING.

REPEATED COMPARATIVE TRIALS have proved that this is the MOST POWERFUL MACHINE IN THE MARKET, that it NEVER REVERSES CURRENT, and that it is very easily worked without special knowledge.

COMPLETE OUTFITS OR MATERIALS FOR NICKEL-PLATING, SILVER-PLATING, ELECTROTYPING, TINNING, BRONZING, &c.

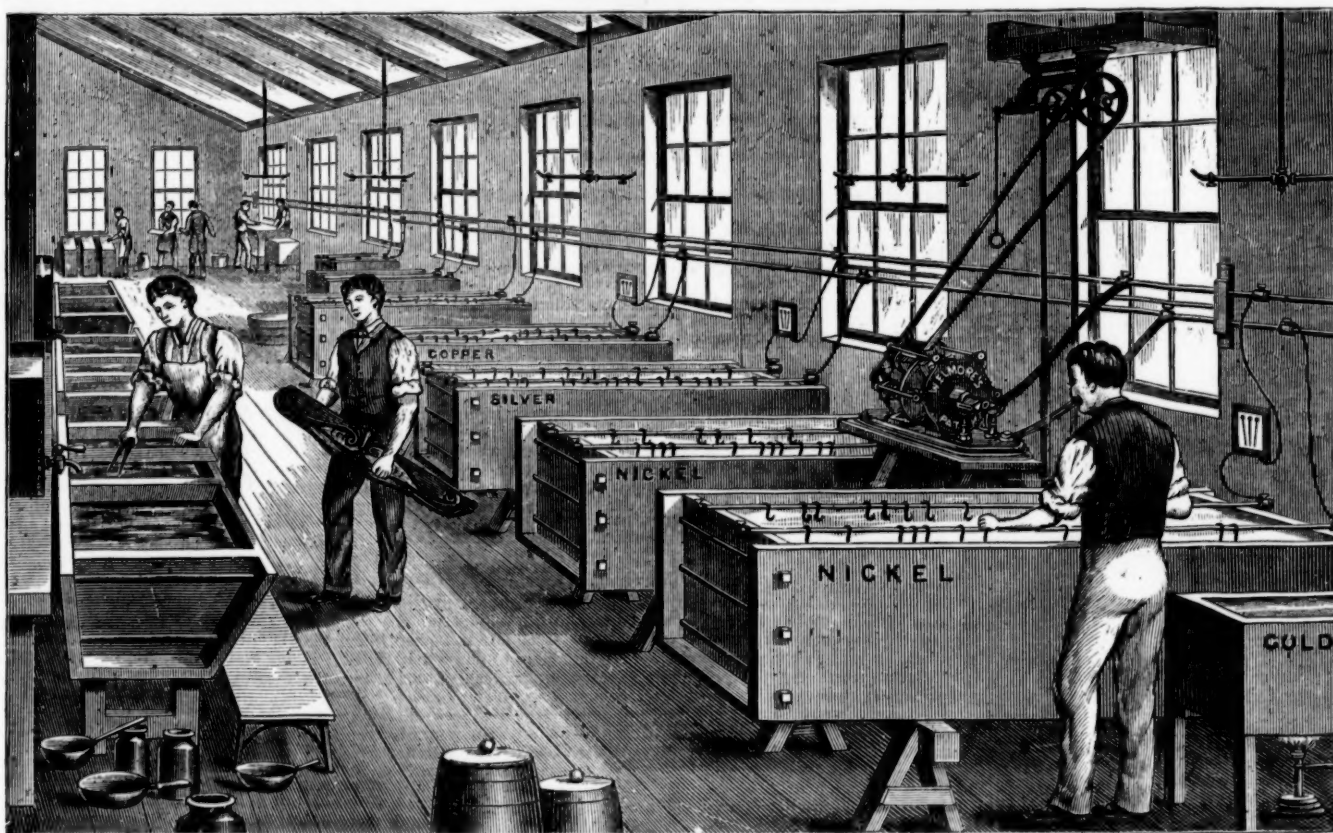
### TO TIN-PLATE MANUFACTURERS AND GALVANIZERS.

The attention of TIN-PLATE MANUFACTURERS AND GALVANIZERS is respectfully directed to the NEW PROCESSES of manufacturing Tin-Plates by depositing the Metal by the current of an "ELMORE'S PATENT" DYNAMO-ELECTRIC MACHINE through aqueous solutions in contradistinction to the old processes of dipping in molten metal.

THE ELECTRO DEPOSITED METAL IS PERFECTLY REGULAR IN character, and the electric current may be so EASILY CONTROLLED as to coat with a MERE FILM OF METAL, OR A DEPOSIT OF ANY DESIRED THICKNESS. The great economy in the cost of plant and cost of production will be immediately self-evident. As nearly the whole of the existing plant can be used in the new process, the cost of altering the system will be comparatively trifling.

DYNAMO-ELECTRIC MACHINES

SPECIALLY CONSTRUCTED FOR DEPOSITING ANY METAL IN ANY QUANTITY.



The above represents an Electro-plating Works, in which an "ELMORE" PATENT DYNAMO-ELECTRIC MACHINE is being used for the deposition of Nickel, Silver, Copper, Bronze, Brass, Gold, Tin, Zinc, &c., from their Solutions.

#### From "INDUSTRY."

"By means of the dynamo-electric machine of Mr. William Elmore, the perfection of nickel-plating is obtained. Dynamo-electricity—that is, electricity produced by motive power—presents advantages which cannot be claimed by any galvanic battery known. Not only is the current produced at a far less cost, but it can be so regulated or controlled that the smallest article can be separately coated by a dynamo-electric machine, capable (in its full application) of depositing from 25 lbs. to 30 lbs. of silver per hour. It is a remarkable fact, moreover, that metals can be deposited from their solutions by dynamo-electricity in less than one-third of the time occupied by the ordinary battery in producing the same result. The quality of the deposit, in regard to its smoothness and regular character, is greatly in favour of dynamo-electricity."

"Having had considerable experience in dynamo-electric machines, Mr. W. Elmore has been careful to note the defects and irregularities which some of the less skillfully constructed machines have presented, and thus he has been enabled to produce a really practical and effective machine, of great power, which may be thoroughly depended upon as being capable of giving the most satisfactory results for all purposes of electro-deposition, including gilding, silvering, bracing, nickeling, and electrotyping."

"The advantages of dynamo-electricity in the important art of electrotyping are beyond estimation. When it is known that a fine, clear, deposit (or 'shell') of copper, 800 ft. square feet, can be obtained by a dynamo-machine in less than three hours, without 'pin-holes,' and other defects common to battery deposits, it will be at once seen that the ordinary battery is effectually and unmistakably superseded."

"One of the most useful purposes to which dynamo-electricity can be applied is the production of chemically pure nickel solutions, and salts of nickel, for the electro-deposition of the metal. The vast amount of electro-

tricity generated in a dynamo-machine enables one to dissolve nickel and other metals in their own solvents, far more economically, and in greater purity than by the ordinary method of treating metals. Electrical power obtained by the ordinary galvanic battery would be far too expensive for this purpose. The solutions formed by the aid of dynamo-electricity are not only purely and economically made; but they can be produced in far less time, and with comparatively little trouble and attention. To Mr. Elmore is due the honour of having introduced into this country the process of making pure nickel solutions and salts by means of dynamo-electricity. The boon he has thus conferred upon a large industrial class we need not dilate upon."

#### From "THE IRONMONGER."

"A still further improvement in the deposition of metals has been recently obtained by the introduction of the dynamo-electric machine of Mr. Wm. Elmore, which is in reality electricity produced by motive power. By this means the current is obtained at a much less cost, and I have seen it regulated to such a nicety that the smallest article could be separately coated in a full-sized vat. The deposit is also effected in about one-third of the time taken by a galvanic battery, and for smoothness and regularity of surface is greatly in favour of the dynamo process, which may be known from the fact that all Mr. Elmore's competitors, both in London and elsewhere, are fast adopting his machine in preference to the old process. He has, in addition, supplied it to many large firms throughout the country for electrotyping purposes, and the reports received from them are gratifying to the inventor. Mr. Elmore is also the author of an interesting little work on the subject, which may be read with interest by those who contemplate entering into what is fast becoming an important industry."

WILLIAM ELMORE, 91, BLACKFRIARS ROAD, LONDON, S.E.

DYNAMO-ELECTRIC MACHINES FOR ELECTRIC LIGHTING.

DYNAMO-ELECTRIC MACHINES FOR DEPOSITING ANY METAL IN ANY QUANTITY.

DYNAMO-ELECTRIC MACHINES SPECIALLY CONSTRUCTED FOR DECOMPOSITION.



## WATSON BROTHERS' MINING CIRCULAR.

WATSON BROTHERS,  
MINEOWNERS, STOCK AND SHARE DEALERS &c  
1, ST MICHAEL'S ALLEY, CORNHILL, LONDON

Many years ago we knew a miller in a country village who went to market at the neighbouring town every Saturday, and if wheat rose 1s. per quarter he hastened home, and put up the price of flour. If, on the contrary, wheat was plentiful and cheaper he took a week or two for consideration before he reduced the price of flour. Now, the Cornish smelters must have had an intimate acquaintance with the ways of this miller, only they act the *reverse* way. If tin in the London market keeps going up they seem to sit quietly looking on for a week or two, and then it is just possible we may hear of an advance in the standards for ore. But if tin in London takes a temporary turn for the worse down goes the standard at once. This was particularly exemplified last week. On the 20th, when tin had been for some time firm and rising, the standard for ore was put up 3l. One week afterwards, on Thursday, the 26th, tin in London was weaker, and the standard was put down again 3l. From Dec. 9 to Jan. 9 there was no advance at all in the standards for ore.

Late on Friday last a telegram was received from East Blue Hills that the lode in the adit east (50 fm. level) had improved to 20l. per fathom. This is supposed to be a continuation of the course of ore worth 40l. per fathom in the level above, and is most important. The winze from the 30 to the 40 fm. level has also been holed on the same lode.

Plumbago, or carburet of iron, consists of carbon 91, and iron 9. It is, in fact, diamond in its first state of oxidation; charcoal is in the second state; and carbonic oxide the third. It generally occurs in lamellar or cleavable masses, and kidney-shaped lumps. The finest was that of Borrowdale, in Cumberland, and to prepare it for pencils we believe it was boiled in oil. An inferior plumbago is black-lead and graphite. We cannot say what percentage the latter should be; but we have plenty of it, we think, of fair quality.

Do not despair. Lead mines may have their turn ere long.

The sampling at Wheal Crebor is 515 tons; the mine is improving, and one or two important points coming off.

Low-priced shares appear most in favour just now, and they are more likely to rise, if properly selected, than heavy stocks.

With the exception of lead, gold is the softest of metals, and requires an alloy to harden it. Standard gold consists of 11 dwts. and 1 of copper. A rich piece of gold, weighing 11 dwts., in a matrix of quartz was found some years ago in Carnon Vale, Cornwall.

Gunnislake has always been famous for its rich variety of copper ores. Phosphate of copper was found there many years ago, and it is not unlike malachite. The red oxides and the sulphates of a high percentage also abounded there many years ago.

Copper ores are "sampled"—that is to say, samples are taken of them for assay one fortnight before they are sold. The sales are at public ticketings, and each parcel is sold by ticket or public tender, the offers being based on the average percentage of metal in the ore as shown by the different assays. We have before explained that if the price per unit of copper is 10s., ore averaging 6 per cent. would bring 3l. per ton. It is difficult to describe the "standard." It is a term given by the smelter to denote a ton of metal in the ore, from which standard he deducts a returning charge of 2l. 15s. for every ton of ore, or as many as may be required according to its produce to give a ton of copper, and which the smelters considered, and probably may still consider, equivalent to the expense of reducing the ore to copper. Thus the miner would in reality raise the ore, and pay for smelting it.

West Caradon, probably next week.

There is nothing particularly new or striking in any of the reports this week and the market has been of a very changeable character. In the early part of the week it looked as if metals and mines were going to smash; then a very sudden reaction set in, and things generally are more hopeful.

## WEST COAST OF SOUTH AMERICA

ROBERT HARVEY, Assoc. M. Inst. C.E.,  
IQUIQUE, CHILI (Telegrams: HARVEY, Iquique).

For the past six years Engineer and General Inspector of the Tarapacá Nitrate Grounds and Manufactories for the Governments of Peru and Chili. Personal Examinations, Plans, and Reports of Mining, Nitrate, Railway, and other properties on the West Coast of South America. Orders received direct, or through SAMUEL HARVEY, Truro, Cornwall.

CAPTAIN ABSALOM FRANCIS, M.E.,  
GOGINAN, ABERYSTWTH

## ARSENICAL PAINT FOR PRESERVING WOOD.

It will be interesting to shareholders in mines producing arsenic to learn that even the refuse can be turned to profitable use, for Messrs. D. BROWN and R. MICHELL, of Trelawney-road, Falmouth, have patented an invention the object of which is to make paint with the refuse from arsenic furnaces, and for using the said refuse with tar or pitch for the preservation of wood and iron. This arsenic refuse is obtained from the crude arsenic after burning; in fact, it is the ash or refuse remaining in the calciner. It is strongly impregnated with particles of arsenic. There are also portions of protoxide of zinc, small portions of tin, &c. It is a great preserver of iron and wood, and a destroyer of all vegetation. The arsenic refuse, which is the basis of the paint, is ground and mixed with ochre and oils, or it is incorporated with tar or pitch. The advantage in using this paint will be conspicuously shown when it is applied to the bottoms of iron or wood vessels as a preventive of the growth of weeds and the adhesion of barnacles.

In practically carrying out the invention, Messrs. Brown and Michell prefer to grind or crush the arsenic refuse in water, but it might be ground or crushed in a dry state. The refuse reduced to a fine powder runs or is conveyed into tanks as it leaves the mill or crusher and is allowed to settle; the water is drawn or let off from the sediment, and the sediment is dried either by exposure to air or by evaporating off the moisture remaining in it. The dry powdered material so obtained is mixed to the required consistency with oil, and it may be ochre or other suitable colouring material. Compounds of lead, zinc, and other mineral substances commonly employed in the making of paint may also be added. A suitable mixture for most purposes is obtained by mixing three parts of the dry powdered arsenic refuse with one part of boiled oil and one of ochre. It will of course be necessary to admix driers as usual with the paint before it is used; the paint also might be made up without the addition of colouring matter. As already stated, the dry powdered arsenic refuse may be used in combination with tar or pitch, or both combined. About three parts powdered arsenic refuse to one part of tar or pitch are suitable proportions to use.

PHOENIX UNITED.—The remarks which have appeared in the *Mining Journal* and the *West Briton*, as to the exact state of the accounts, continue to call forth remarks from several parts of Cornwall and elsewhere. A shareholder now writes to say that nothing short of an independent public accountant (not Cornish) will satisfy him to render a true cash account, and of the existing liabilities and assets of the company, and as the mine is looking so well the extra cost of obtaining a true statement from such accountant would be a mere trifle, and would, no doubt, give shareholders important information.

## SEVENTY-FIVE SHARES IN THE MINING SHARES INVESTMENT COMPANY (LIMITED), AND FIVE SHARES IN THE MINES AND WORKS OF PONTGIBAUD.

MESSRS. NORTON, TRIST, WATNEY, AND CO. are instructed by the Executor to SELL THE ABOVE SHARES, at the Mart, on Wednesday, the 15th February, at Two o'clock, in Two Lots. Particulars may be had of the Auctioneers, 62, Old Broad-street, E.C.

## COALS.

TENDERS will be RECEIVED until Two o'clock on Wednesday, the 8th February, for

LAND ENGINE, SMITHERY, AND GAS COALS  
For H.M. Dockyard Extension Works.

Forms of Tenders, containing Conditions of Contract, and all particulars, may be obtained on personal application at this office, or by letter, addressed "Director of Navy Contracts, Admiralty, Whitehall, S.W." JOHN COLLETT, Director of Navy Contracts.

Contract Department, Admiralty, Whitehall, S.W.,  
24th January, 1882.

## STENCIL PLATES.

TO ENGINEERS, AND ALL WHO DRAW PLANS.

TO BE SOLD, a MAGNIFICENTLY EXECUTED SET FOR LETTERING PLANS, &c. The SET consists of TEN COMPLETE SETS OF ALPHABETS, plain, shaded, and ornamental; FOUR SETS OF FIGURES in various styles; and FIFTY PLATES of all the principal words used upon Engineering Drawings, including Scales, Points, Corners, &c., in a mahogany case, with Brushes. Price for the whole, 30s.  
Apply to Mr. G. BAKER, 22, Orpingley-road, Hornsey-road, London, N.

## IMPORTANT MINES IN NORWAY.

FOR SALE, OR LEASE, "EIDSVOLD GOLDWORK" with MINES OF GOLD IN QUARTZ, IRON PYRITES, AND ALLUVIAL GOLD. SOLE RIGHT TO SEARCH FOR AND WORK NATIVE SILVER IN THE ROYAL SILVER MINING DISTRICTS OF KONGSBERG; several COPPER MINES and INDICATIONS close by BRATSBERG MINES, in Thelemarken and AKENDAL MINES; several RICH COPPER and SILVER LEAD MINES and APATITE QUARRIES.  
Apply to—  
A. SCHARTUM-SWENSEN AND CO.,  
Agents for the Sale of Mines, Christiania, Norway.

SVENNINGDAL SILVER MINE, in VEFSEN, Norway, FOR SALE. The mine is advantageously situated; since 1878 worked with an average of 30 hands. The whole produce, 570 tons of ore, containing 0.40 per cent. to 1.00 per cent. of silver, besides lead, zinc, and a little gold. About 12,000 to 14,000 tons of poorer ores are laid up for dressing. Other promising indications close by.  
Apply to the Directors, Mosjøen, Norway.

FOR SALE:—  
ONE 50 inch and ONE 40 inch PUMPING ENGINES, with BOILERS and FITTINGS.  
ONE 22 inch ROTARY ENGINE.  
ONE 12½ inch HORIZONTAL ENGINE, with CAPSTAN and HAULING MACHINE attached.

All the above Engines are in first-class condition. Several WATER-WHEELS, from 20 to 60 feet diameter. STAMPS' AXLES, and a large quantity of SECONDHAND MINING MATERIALS.  
Apply to J. and H. PEARCE, TAVY IRONWORKS, TAVISTOCK.

ON SALE, NEW PAIR of 20 in. HORIZONTAL WINDING ENGINES, 3 ft. 6 in. stroke, wrought iron cranks, crank shaft, 9½ in. diameter, 11 ft. 6 in. centres.  
20 horse PORTABLE WINDING ENGINE, with two 10½ in. cylinders, link motion, and winding gear, drum 5 ft. 6 in. diameter, only worked a few weeks, and since been thoroughly overhauled by the makers; equal to new.  
T. JOHNSON, 72, DICCONSON STREET, WIGAN.

SECOND-HAND, BUT EQUAL TO NEW:—  
STEAM BOILERS.—Three first-class Boilers, 30 ft. by 7 ft., two flues, Galloway tubes in, and fittings, four years old, insured at 75 lbs. pressure. Will be sold cheap.  
BOILERS.—Two Boilers, 28 ft. by 7 ft., two flues. Been working at 65 lbs. Pressure on rails, £130 each.

Other sizes of Boilers in stock, in excellent condition, 28 ft. by 7 ft., 24 ft. by 7 ft., 24 ft. by 6 ft., 20 ft. by 5 ft., 15 ft. by 5 ft., and 12 ft. by 5 ft. Safe for 65 and 60 lbs. pressure. Very cheap.  
PUMPING ENGINES.—Beam and Horizontal. Diameters of cylinders, 100 in., 90 in., 65 in., 60 in., and 38 in. Very cheap.  
WINDING ENGINES and COLLIERY PLANT of every description, second-hand, in stock.

H. HELLEWELL AND CO., 4, NORTH CORRIDOR,  
ROYAL EXCHANGE, MANCHESTER.

FOR SALE, a 30 H.P. PORTABLE STEAM ENGINE; with link-motion reversing gear, has drum and gearing complete for winding and pumping.  
A 14 H.P. PORTABLE WINDING and PUMPING ENGINE.  
Also a 6 H.P. PORTABLE HOISTING ENGINE.  
Apply to—  
BARROWS AND STEWART, ENGINEERS, BANBURY.

## MINE MATERIALS.

FOR SALE, at ST. IVES CONSOLS MINE, BY PRIVATE CONTRACT, about 70 fathoms of 8 in. and 9 in. PITWORK, ROD PLATES, &c.  
For particulars, apply at the Account-house to Capt. MICHELL, Dated St. Ives, Cornwall, Jan. 18, 1882.

SOUTH WALES STEAM COAL COLLIERY FOR SALE, now in regular work, producing first-class Aberdare Smokeless Steam Coals, well known on the market. Satisfactory reasons can be given for owners parting. Principals or their solicitors only treated with.  
Apply, by letter, "Steam Coal," care of Messrs. G. Street and Co., 30, Cornhill, London, E.C.

TO BE LET, GLEDLOM IRON ORE MINE, situated in the parish of YSCFIOG, FLINTSHIRE. Has been worked some years. Plant in good order.  
Apply to J. DONNELL, Esq., Tarvin Sands, Chester; or to T. V. DONNELL, Yscelfiog.

VALUABLE SILVER MINING PROPERTY IN COLORADO FOR SALE.

For further particulars, apply to W. E. and A. J. ANNAN, Writers, 112, West Regent-street, Glasgow.

STAMPER (PNEUMATIC) FOR SALE (cheap), for CRUSHING GOLD and other QUARTZ, capable of doing about 1 ton per hour.

Apply, BRINJES and GOODWIN, Whitechapel Engine Works, Fieldgate-street, London, E.

FOR SALE, the RHOS ANTHRACITE COLLIERY, now and for some time past working about TWO HUNDRED TONS per day. It is connected by rail with the ports of SWANSEA and LLANELLY.

Apply to WILLIAM ROSSER, Llanelly, South Wales.

ALEXANDER SMITH, M. Inst. C.E., CONSULTING ENGINEER and VALUER of IRONWORKS, MINING, RAILWAY, ENGINEERING, and other PROPERTY, PLANT, and MACHINERY,  
1, PRIORY STREET, DUDLEY

Mr. SMITH has been retained nearly 20 years by some of the most prominent firms, and has conducted many of the largest valuations that have taken place in the kingdom.

Valuations for Stock Taking or any other purpose upon very reasonable terms.

GOLD MINES NEAR GYMPIE, QUEENSLAND

SILVER MINES IN ARIZONA, U.S. AMERICA.

Capitalists desirous of obtaining Rich Mineral Grants of the above for the purpose of forming a Company or Companies to work the same, are requested to communicate with—  
Mr. W. DENHAM KING, Solicitor, Camelford, Cornwall

ENGLISH CAPITALIST wishing a CORRECT REPORT on the SILVER MINES OF COLORADO will do well to apply to—  
Capt. DANIEL ROBERTS, Georgetown, Colorado.

## LEAD MINING ENTERPRISE IN BRITISH BURMAH.

The Holder of EXTENSIVE MINING PRIVILEGES from the Government over a tract of land containing VAST LEAD DEPOSITS in BRITISH BURMAH, seeks the CO-OPERATION of TWO or THREE GENTLEMEN (one has already joined him), who will together take a third share in the Adventure. About £10,000 will, it is believed, place the enterprise in profitable working order. A highly favourable report upon the mines has been made to the Government by the late Mr. MARK FYAR, the Government Geologist and Mining Engineer, and assays of the ore by Messrs. JOHNSON, MATTHEY, and Co., of London, give over 74½ per cent. of lead and 13 ozs. of silver to the ton. There is abundance of water carriage, splendid timber, moderate labour, and a good market for the produce. The Government grant secures four square miles for ten years free, and for 20 years thereafter at the nominal payment to the Government, in lieu of royalty, of £20 per square mile per annum. To negotiate, address "Maulman," Rivermead, Sunbury-on-Thames.

WANTED, by a Swedish Mining Engineer, EMPLOYMENT at any extensive Mine. Has passed Examination of Mining School, Stockholm, and since practised at the Copper Mine of Fahlun. Speaks English, French, and German.  
Address, Mr. PAUL JOHNSON, Mining Engineer, the Copper Mine, Fahlun, Sweden.

## MILLMAN.

WANTED, an INTELLIGENT MAN acquainted with the MILLING of GOLD ORES and GOLD SAVING APPLIANCES. One who has been practically employed in California or Australia preferred.

Address, stating age and particulars, to J. DARLINGTON, 2, Coleman-street Buildings, Moorgate-street, London, E.C.

A MINING ENGINEER, of over Twenty Years' Experience, is OPEN to an ENGAGEMENT. Has had the management of large Collieries, Ironstone Mines, and Limestone Quarries. No objection to go abroad.  
Apply, "Y. S.," MINING JOURNAL Office, 26, Fleet-street, E.C.

## TACQUAH GOLD MINES.

A PRACTICAL WORKING GOLD MINING ENGINEER WANTED, to OPEN UP the MINES of the TACQUAH GOLD MINES COMPANY (LIMITED), where a lode of 6 ozs. of gold to the ton of ore is already being worked by shaft.  
Address, "F.," Tacquah Gold Mines Company's Office, 4, Coleman-street Buildings, Moorgate-street, E.C.

THE GREAT POLGOOTH UNITED TIN MINES COMPANY (LIMITED).

Notice is hereby given, that the THIRD QUARTERLY DIVIDEND, at the rate of SEVEN AND A HALF PER CENTUM PER ANNUM, will be PAYABLE on and after the 13th February, 1882. The Transfer Books of the company will be closed from the 1st to the 13th February inclusive.

By order of the Board, WILLIAM TREW, Secretary.  
48 and 49, Palmerston Buildings, Old Broad-street, E.C.,  
30th January, 1882.

RICHMOND CONSOLIDATED MINING COMPANY (LIMITED).

Capital £270,000, in 54,000 shares of £5 each.

## THIRTY-FIRST DIVIDEND.

Amount of dividends already paid, £700,517 10s.

Notice is hereby given, that the directors of the above company have this day DECLARED a DIVIDEND of TEN SHILLINGS PER SHARE, free of income-tax, PAYABLE on and after Wednesday, the 8th day of February proximo, at the Company's Bankers, the Union Bank of London, 2, Princes-street, E.C.; and notice is hereby further given, that the Transfer Books will be closed from 3rd to 7th February, both days inclusive.

By order of the Board, HUBERT AKERS, Secretary.  
Offices: 44, Coleman-street, London, E.C., 31st January, 1882.

MINE "EL CALLAO," GUAYANA, VENEZUELA

COUPONS OF SHARES..... 322

Gold in bars produced in the month of December, 1881, and remitted to Messrs. Baring Brothers and Co., London, 6579 96-109 cns. DIVIDEND distributed for each coupon, \$100.

(Signed) A. J. CAGNINACCI, Vice-President.

(Signed) G. BARNEWITZ, Treasurer.



By a special method of preparation this leather is made solid, perfectly close texture and impermeable to water; it has, therefore, all the qualifications essential for pump buckets, and is the most durable material of which they can be made. It may be had of all dealers in leather, and of—

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TANNERS AND CURRIERS,

LEATHER MILL BAND and HOSE PIPE MANUFACTURERS

LONG LANE, SOUTHWARK LONDON

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ALL BANDS, HOSE, AND LEATHER FOR MACHINERY PURPOSES.

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PALMER'S SHAREHOLDERS' AND DIRECTORS' LEGAL COMPANION:

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With an APPENDIX on the CONVERSION OF BUSINESS CONCERNS INTO PRIVATE COMPANIES.

By FRANCIS B. PALMER, Esq., Barrister-at-Law, Author of "Company Precedents."

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SMALL ENOUGH TO CARRY IN THE POCKET ANEROID CASE.

PRACTICAL HYPSONOMETRY: A Method of DETERMINING ALTITUDES (Heights of Mountains and Depths of Mines) accurately and almost instantaneously, with the Aneroid Barometer, WITHOUT TABLES.

Price One Shilling, post free.

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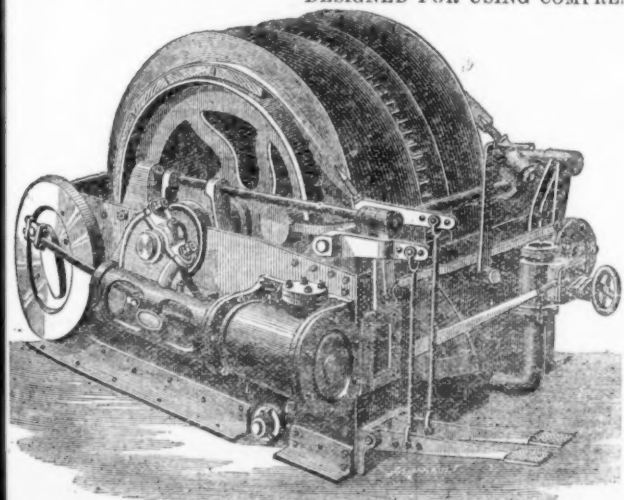
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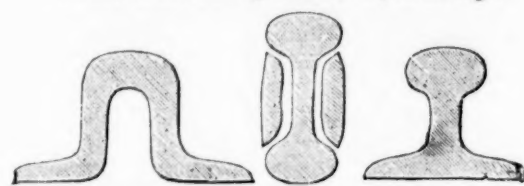
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